

Regulatory Reform and Eco- Development in Winnipeg:

The Westminster Square Eco-Village

By Alexander Grey Stuart

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Submitted to the Faculty of Graduate Studies
In Partial Fulfillment of the Requirements
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of Manitoba in partial fulfillment of the requirements of the degree
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Fa dheoidh!

Abstract

As urban centres continue to expand in population and in area, their impact on the environment increases. One method of reducing the ecological impact of urban centres is the eco-village, an approach to community built to specifications which lessen the impact on the environment. However, in many cases, regulatory and other barriers make the construction of eco-villages and other forms of environmentally benign development difficult, if not impossible. The research examines the regulatory barriers facing a proposed eco-village development in central Winnipeg's Wolseley neighbourhood; the Westminster Square Eco-Village Project. Following an initial literature review and a consultation process with key stakeholders, a list of proposed eco-village elements was identified for examination. Key regulatory officials were then interviewed to determine the barriers to these elements, and how to overcome them. Surprisingly, regulatory barriers were found to have less of an impact on this project proposal than was anticipated. Rather, other barriers not covered by this thesis, such as social and financial barriers, were found to have a similar impact to the regulatory barriers. Despite these findings, some regulatory barriers to eco-village development do exist in Winnipeg. This research project concludes with a set of regulatory and procedural recommendations for the City of Winnipeg, which are intended to create a more favourable regulatory environment to support innovative forms of development.

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List of Acronyms used in this document

The following acronyms are used throughout the document. For ease of reference, they are defined here, as well as in the body of the document itself.

A-C-T: Affordability and Choice Today

CMHC: Canada Mortgage and Housing Corporation

LAEV: Los Angeles Eco-Village

TND: Traditional Neighbourhood Development

TOD: Transit-Oriented Development

WSEV: Westminster Square Eco-Village

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Chapter 1 - Introduction, Outline, Project Background and Site Information

1.1 Introduction

The increased awareness of overall human impact on the environment has led to a greater understanding of the impact that urbanization has on the environment, and the acknowledgement of the "serious global ecological ramifications" of contemporary North American urban forms (Aberley, 1994, 72). An eco-village represents one approach to address the negative impact that urban areas have on the environment, and indeed with the larger problem of human impact on the environment. Eco-villages have been described as "human-scale full-featured settlements in which human activities are...integrated into the natural world in a way that is supportive of healthy human development and can be successfully continued into the indefinite future" (Gilman, 1991, 10). This definition informs the present research.

In Winnipeg, a vision was developed in 1996 for an eco-village in the Wolseley neighbourhood. Called the Westminster Square Eco-Village (WSEV), and based upon an earlier (1983) proposal which never left the drawing board, it envisioned a low-impact, environmentally benign development. This development incorporated technology, mixed-use zoning, design innovations and efficient resource use to enable the residents to live a more sustainable urban lifestyle. After an extensive consultation process during 1997 to 1998, the stakeholders revisited the 1996 vision and developed their own proposal for the project. The resulting product was less innovative than the initial concept envisioned, but the community-based nature of this process meant that the stakeholders determined the vision for the project.

This practicum analyzes the vision developed by the stakeholders at that time. The aim of the research is to understand the numerous regulations, both municipal and provincial that inhibit the implementation of the vision. Existing fire regulations, health regulations, zoning by-laws and the building code combine to make timely eco-village development and implementation problematic. The study examines the process by which the stakeholders arrived at their vision, and examines the vision to determine where the barriers to implementation lie. Following this, proposals to remove the barriers are outlined, along with recommendations for regulatory bodies to ease the current approval process. The first chapter provides background material on the project, including the clients and an overview of the process, as well as the objective and the purpose of this research.

1.2 Clients

The primary client for this practicum is the Affordability and Choice Today Program (A-C-T Program). This program is jointly funded by the Canadian Homebuilder's Association, the Federation of Canadian Municipalities and the Canada Mortgage and Housing Corporation (CMHC). It exists to support projects involving regulatory reform initiatives and studies which have the potential to improve housing. The emphasis of the program is on "practical solutions for improving housing affordability" (A-C-T, Personal Correspondence, 1997, 2). Their interest in the WSEV was due to the fact that A-C-T staff considered it to be "innovative, [involving] good consultation and [having] a high potential for transferability" (A-C-T, 1997, 2). A-C-T funded the Westminster Square Eco-Village Project, which this study is largely based upon. The final report for this project, entitled "Westminster Square Feasibility Report" and submitted in the summer of 1999, included both

a feasibility recommendation and a development framework to be used by groups interested in developing eco-villages. A significant portion of the report was a section on barriers, identifying specific regulatory barriers and recommendations for regulatory reform. Upon receipt of the final report, the client will prepare a summary, which will be made available to other groups across the country who are interested in the project.

Another client is the City of Winnipeg. While not directly involved in the project, City staff provided substantial direction and information during the course of the study. In addition, the Community Planning Department wrote a letter of support for the Westminster Square Eco-Village project, and a senior planner from this department was involved in the development of the project proposal. This practicum may prove to be useful to the City as a set of recommendations for dealing with innovative development.

The WSEV feasibility study was conducted under the auspices of the Eco-Village Project, a community development project which is now defunct, but which was funded from 1996 - 1999 by the Samuel and Saidye Bronfman Foundation. The Eco-Village Project planned to use the findings of the WSEV study in considering the feasibility of a proposed eco-village in the West Broadway neighbourhood. Initially, the study group was composed of community volunteers, and was led by the director of the Eco-Village Project. This group developed the grant proposal, and set down the terms of reference for the work itself. Following this, the group disbanded for a variety of reasons, and the project consultants, who were hired to conduct the feasibility study, compiled the final report to the A-C-T Program.

It is important to note the author's role in this larger project as it relates to the practicum research. I was paid as a consultant by the Eco-Village Project to implement the feasibility study according to the guidelines set by A-C-T (please see Appendix B for the

specifics on the A-C-T requirements). My role was to organize a working group and carry out the study. The focus of this practicum is the study of regulatory barriers, using the Westminster Square Eco-Village project as the major case study. This document goes into greater detail about the regulatory barriers than does the A-C-T report. The only aspect shared by the two documents is a discussion of the process whereby the stakeholders developed the vision for the site. This document outlines the process and the results, while the A-C-T document provides only the results.

In order to avoid a perceived conflict of interest, I emailed A-C-T and informed them of my intentions to use the research done for their feasibility study in my practicum. I received no response from them, despite sending the email on two occasions. I can only assume that there is no perception of a conflict of interest on their part. In addition to this, the Eco-Village Project, through whom I was hired, is no longer in existence, which eliminates the possibility of a conflict of interest. The coordinator of this project was aware of the nature of my practicum at the beginning, and expressed no concerns about my use of the research done for the A-C-T document. The ethical implication of my dual role is whether or not A-C-T would support the use of research done for a study commissioned by them. In contacting them, I attempted to clarify this, but was unable to, due to the lack of a response. As the A-C-T staff has always been prompt in responding to my requests regarding the feasibility study, I can only assume that this is not perceived to be a problem. In addition to this, I have ensured that the material used for each document is distinct, and the only shared materials are my original research notes, which were compiled during the consultation process and during the interview process. The interview process for the feasibility study was more in-depth than the interviews for this document, and included interviews with bank officers, contractors and

developers. Some of the notes compiled during these interviews were used in both documents, but the practicum research was kept as distinct as possible. I have also included some of the resident information package as Appendix A, but this is intended only to support my practicum.

Another issue worth noting is the payment I received for the completion of the A-C-T study. I was paid for conducting the community consultation, which forms the core of the A-C-T document, and provides a basis for this practicum. In addition to this, several of the interviews, which were conducted in order to determine regulatory barriers and solutions, were shared between the two projects. Therefore, I was paid for some of the work which was used in this practicum, but the great majority of the work done for this document was unpaid and on my own time. The University of Manitoba does not have strict rules regarding this, provided that copyrights are not infringed upon, or that proprietary documents are not used.

1.3 Purpose and Objective

The objectives of this study are two-fold: The first is to determine the regulatory barriers which inhibit approval and implementation of eco-developments such as Westminster Square. The second is to develop a set of recommendations for regulatory reform that would ease the implementation of eco-developments in Winnipeg, and A-C-T as a guide for regulatory agencies seeking to eliminate barriers to innovative developments.

1.4 Project Background

The Westminster Square Eco-Village project arose from a drawing done in 1983 by Prairie Partnership Architects (see Fig. 1.1). Funded by a CMHC grant, the drawing

envisioned an environmentally friendly development occurring on the block on the north side of Westminster Avenue that lies between Arlington on the east and Evanson on the west. As the drawing is now over sixteen years old, it has been difficult to determine how it originated, and what its intended purpose was. After this initial interest, the project was dormant until a group of residents examined the drawing in 1996 and formed a group to investigate the feasibility of the project on the Westminster Square site. Some community members who took part in the initial drawing were involved again in 1996, however, their memories of the earlier project have faded

The Westminster Square site was seen by the initial volunteer group as the ideal physical location for an "eco-village," due to the perceived receptivity of the neighbourhood, the existing drawing, and the mixed-use character of the site. Existing ecological conditions were not significant, and do not appear to have been a factor in the choice of the site by the initial project team.

Over the course of the next eighteen months, the consultants carried out the feasibility study commissioned by A-C-T on the site. After a lengthy consultation and research process, the consultants concluded that the project as proposed was not feasible for a variety of reasons. A number of barriers to the development of an eco-village on this site were identified, but not examined in-depth. This study examines them in greater detail.

1.5 Site Information

As shown on Figure 1.2, the proposed site of the WSEV is located in Winnipeg's inner-city Wolseley neighbourhood. In the 1991 census, the community contained approximately 8,140 residents, and 3,565 dwelling units, (City of Winnipeg, 1991).

The neighbourhood is located just to the north of the Assiniboine River, and is bordered by Portage Avenue on the north, Omand's Creek on the west and by Maryland on the east. It is an older, established community, with 90.6% of the housing stock having been constructed prior to 1960 (City of Winnipeg, 1991).

There are many businesses located along the south side of Portage Avenue, at the northern edge of the community, but there are only a few businesses within the neighbourhood itself. The Westminster Square site (Fig 1.3) is located along Westminster Avenue, the main commercial street of the inner part of the Wolseley neighbourhood. Westminster Avenue, between Arlington and Lenore, contains twelve businesses and shops (the largest concentration of stores and other businesses in the inner part of the neighbourhood). There are nine along the street itself, and three just to the north of Westminster. Seven of these businesses are located in the Westminster Square site.

While most of Wolseley is zoned R2 (single and multi-family dwellings only), Westminster Square is zoned C1 (commercial), with a "grandfather clause" for the residential units. This allows the businesses and residential units to co-exist on this site (Fig 1.4). Of the five houses on the site, one is a restaurant (the Wolseley Elm), and one contains two shops (The Sheep Boutique and the Oracle Grove), as well as a dwelling unit. There is one building devoted entirely to commercial use, which contains Sled Dog Music and a sound effects company. The apartment building contains two businesses (Prairie Sky Books and Harvest Collective) as well as eight dwelling units.

The residents currently own only one of the houses. The proprietor of the Sheep Boutique owns the building in which it is located but does not live in the upstairs dwelling

unit, choosing to rent it out instead. There are a total of seven dwelling units in the houses as well as eight in the apartment building, for a total of fifteen dwellings units.

1.6 Limitations and Assumptions of the Study

This study is based upon a project contracted by the Affordability and Choice Today program and the Eco-Village Project. The study as a whole was intended to demonstrate the feasibility of an eco-development on this site, and as such, this study is limited to an examination of this particular site.

The study examines only the regulatory aspects of eco-development barriers. Other barriers exist, such as the financial barriers to this development. These barriers were significant in the final report for A-C-T, but fall outside the boundaries of this study. Further studies need to be carried out to determine other barriers, especially the social and financial barriers which emerged during the feasibility study. In particular, this study does not address the issue of market choice, which, in my view, is a significant factor in eco-village development. Nor does it examine urban sprawl and current fiscal policies as disincentives to eco-village development and to sustainable development as a whole. These are factors which require further study for a more thorough understanding of eco-village development in Manitoba, and indeed in Canada.

Finally, the proposed site redevelopment concept used in this study emerged from a series of discussions, and surveys held with commercial and residential tenants of the site and residents of the surrounding area during the spring and summer of 1998. The population of the site has since changed, and perhaps the shifting demographics and fickle trends would mean that the current residents would develop a new model. The third chapter contains more

information on this aspect of the study. However, the model exists as the goal for the time in which it was developed.

1.7 Document Overview

This document is divided into six chapters, with three appendices. The first chapter contains the introduction and provides background material on the practicum and the project. The second chapter is the literature review, and the two main themes examined in this chapter are sustainable development/sustainable communities and the barriers to sustainable communities. The third chapter outlines the process of the community consultation, and outlines the research methods used. Finally, the fourth and fifth chapters provide an overview of the specific regulatory barriers, recommendations to bypass or eliminate these barriers, and the overall conclusion to the practicum. A bibliography of works consulted, along with several appendices, drawings and maps are included at the end of the document.

Chapter 2 - Literature Review

This chapter provides an outline of the relevant literature, focusing on two main areas. The first section explores the concept of sustainable development, how it applies to urban areas and provides specific case studies of sustainable communities. The second section considers examples of barriers to sustainable community development identified in the literature.

2.1 Sustainable Development

In order to explore the concept of sustainable communities, it is necessary to examine the roots of the term "sustainable development." This term can be traced back to the Brundtland Commission, an independent body set up in 1983 by the United Nations. In 1987, the commission released Our Common Future, having the concept of sustainable development at its core (Roseland, 1992, 6). This term was defined as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (Roseland, 1992, 6). Roseland believes that sustainable development has three key elements, namely that environmental considerations must be entrenched in economic policy-making, that sustainable development incorporates an inescapable commitment to social equity and that development does not simply mean growth (Roseland, 1992, 7-9).

2.1.1 Sustainability and Urban Areas

In terms of urban areas, the shift to sustainability requires a number of changes. The earth simply cannot support the lifestyle of the industrialized world. While the cities of the are

underdeveloped, and their drive towards sustainability is connected with their development, this is not the case in the industrialized world. Our cities are, if anything, overdeveloped, as is shown in Rees' "ecological footprint" model. Profligate use of resources, imported from all over the world, and in many cases, an urban form (sprawl) which is inherently unsustainable, are hallmarks of our cities (Roseland, 1992, pp 22-25). The issue of urban sustainability represents an attempt to address these issues and to reduce the impact that cities in the industrialized world have on our environment.

2.1.2 Eco-Villages and Sustainable Communities

The eco-village movement offers one response to the growing awareness of urban sustainability. The term "eco-village" is perhaps best described in Gilman's seminal article "The Eco-Village Challenge." In this, he defines the term "eco-village" as "a human-scale, full featured settlement in which human activities are...integrated into the natural world in a way that is supportive of healthy human development and can be successfully continued into the indefinite future" (Gilman, 1991, 10).

While this works in theory, it is much more difficult to implement in practice. For example, the Westminster Square project does not fulfill the criteria set forth by Gilman. The project is on a much smaller scale and does not go into the depth outlined by Gilman. For example, Gilman describes the "bio-system challenge" (Gilman, 1991, 12) as one of the four challenges faced by eco-villages. As an aside, the labels provided by different authors tend to differ largely in their name, rather than their content. Thus different labels will be occasionally be used during the course of this review, but ultimately, the end result is the same.

Moving back into the broader concept of sustainable communities, one of the earliest works identifying many of the features found in current eco-village proposals is Ernest Callenbach's Ecotopia, which was published in 1975. This is a work of fiction, set in a hypothetical future in which the Cascadia region of the United States has seceded and developed an ecologically sustainable society. However, his views of urban life in this society reflect many of the beliefs found today in the literature on sustainable communities. High-density housing, integration of ecological and human systems, a widespread use of alternative energy, a sustainable economic and social system, along with many other features, make Callenbach's cities "sustainable" before the term was widely used. I found this interesting mostly because it is not an academic work. Obviously, as a work of fiction, some of the components of his work would seem far-fetched, but Callenbach's writing helped me to visualize what a sustainable city could look like.

In the more contemporary works, perhaps one of the most influential works, at least in terms of my own interest in this topic, is Mark Roseland's 1992 study, entitled Toward Sustainable Communities - A Resource Book for Municipal and Local Governments. Intended as a resource book for local governments, Roseland's book is divided into a number of sections, each addressing a different aspect of sustainable communities. Roseland moves from the concept of sustainable development as a whole, down to topics such as air quality, sewage treatment and land-use management. He also provides case studies and resources in each section. Roseland does not focus on labels, but rather on the concept of sustainable communities as a whole. Elements of what other theorists call neo-traditional design, pedestrian pockets or eco-villages are all found in Roseland's work, which is also valuable for the sheer breadth of the information it contains.

Another overview of sustainable communities is found in the Assessment of Built Projects for Sustainable Communities, by Perks and Van Vliet (1994.) In this work, they describe, among other ideas, Hahn's "mutually complementary `fields of action', which are: urban technology and urban design, urban democracy and environmental communication and urban economy and employment (Perks and Van Vliet, 1994, 6). These three fields roughly correspond to Gilman's ideas of social, environmental [physical] and economic sustainability as requirements for urban sustainability.

In their second chapter, they go into much greater detail about the components of urban sustainability, with their inclusion of a "checklist," which identifies the components of the five sustainable communities they examined in Scandinavia. There are ten categories on the list, and they are as follows: Architecture and Building Ecology, Land Use/Green Areas, Community Design (land use and housing design), Energy, Water, Traffic/Transportation/Circulation, Minimize Waste, Re-use/Recycle, Community Planning & Management and Economically Favourable. I found this to be especially helpful in developing the third chapter of this practicum. These categories represent the "building blocks" of sustainable communities. In my view, Perks and Van Vliet go farther than others in breaking down the categories into specifics, but the focused nature of their research in this work allowed them to do so. While other authors I studied did not go into this detail, I found it difficult to imagine that other contemporary theories would be very different, and indeed this proves to be the case.

The Ecology of Place, by Beatley and Manning, provided further insight into the nature of sustainable communities. The second chapter is entitled "Envisioning Sustainable Places," and the authors begin this chapter by stating: "Whether they are called `green

communities', 'green cities' or 'ecocities', sustainable places seek to limit environmental impacts and the consumption of natural resources" (Beatley/Manning, 1997, 27).

To me, this statement demonstrates the common goals held by proponents of sustainable communities. Regardless of the title, the goals and ideals remain similar. Thus, the term "eco-village," as used by the A-C-T Program in the development of this proposal, is not greatly different from Roseland's "sustainable communities," nor, although there are differences, is it substantially different from the same term as used by Gilman.

Beatley and Manning go on to identify a number of elements that are common to this term. They feel that "sustainable places exhibit a compact urban form," and "seek to contain the extent of the urban footprint" (B/M, 1997, 28). Interestingly enough, Callenbach's description of the typical Ecotopian city resembles Beatley and Manning's description of sustainable places.

2.1.3 Sustainable Communities - Definitions and Typology: CMHC

Another examination of the concept of sustainable communities is provided by the Canada Mortgage and Housing Corporation (CMHC) in a 1995 report, entitled Changing Values. Changing Communities: A Guide to the Development of Healthy, Sustainable Communities. In this work, the authors provide an overview of four types of sustainable communities, include an evaluative framework and a cost-benefit analysis, examine seven case studies and provide a list of resources. While, the authors state that the focus of their work is on new development, they are careful to add that "much of the information is applicable to redevelopment and renewal projects (Hygeia, 1995, 1). This document provided a clear overview of sustainable communities, and reinforced my understanding that the titles

are often of lesser importance than the projects themselves. Whether a project is called an eco-village or a transit-oriented development, the fundamental concepts are often the same.

Four types of sustainable communities are examined: eco-villages, neo-traditional developments, pedestrian pockets and co-housing, are covered very briefly. Neo-traditional developments and pedestrian pockets are examined for their design features, and are linked under the concept of "new urbanism" (Hygeia, 1995, 10). Co-housing is examined in a bit more depth, but the authors admit that it is a "new name for an alternative approach which has existed in North America for some time" (Hygeia, 1995, 11). However, the authors devote more attention to eco-villages.

They define eco-villages as containing "a planning approach whose primary aim is to reduce the environmental impact and resource consumption of urban developments to a minimum" and link the roots of eco-villages to the Garden City proposition of the late 19th century (Hygeia, 1995, 12). They describe the environmental sustainability concepts of this type of development ("environmentally sustainable communities" (Hygeia, 1995, 12), and link eco-villages with the other forms of sustainable communities described in this report.

2.1.4 Case Study: Bamberton

In terms of actual projects, both proposals and built projects, one informative case is the Bamberton project. Planned as a sustainable community north of Victoria, the project encountered a number of problems before finally being abandoned. I found it noteworthy for two reasons, first, it is an example of sustainable community design in a Canadian context. Second, the proposal also encountered numerous barriers during the development process and ultimately failed.

The project was proposed as a brownfield development on the site of an old cement plant. There were four main design elements along with a number of environmental factors which made this project innovative. The design factors followed a set of principles developed by Christopher Alexander (A Pattern Language) and traditional neighbourhood development (TND) espoused by Andres Duany and Elizabeth Plater-Zyberk (CMHC, 1994, 360).

These design elements were: Most houses were planned to be within five minutes walk of a "village centre," to reduce automobile use. Streets were to be narrow, with a maximum speed of 20-30 km/h, with houses built close to the street, and a "rich network of local streets," which was planned to avoid the typical suburban collector and feeder road design (CMHC, 1994, 360). With the exception of the reduced street speeds, all of these elements are already in place on the Westminster Square site.

In a set of CMHC conference proceedings, Guy Dauncey, the environmental consultant for the Bamberton project, examined what he felt were the elements of "planning for sustainability and wholeness" (CMHC, 1994, 369). He writes of "the need for not one but five levels of infrastructure" (CMHC, 1994, 369). These five levels are: physical, environmental, economic, community and cultural (a vision shared among the residents) (CMHC, 1994, 369). These roughly correspond to the physical, economic and social factors of sustainability examined elsewhere, supporting my understanding that despite different labels, the ideas behind sustainable communities share considerable commonality.

2.1.5 Case Study: Los Angeles Eco-Village

Another relevant case study is found in Los Angeles, where the Los Angeles Eco-Village (LAEV) is a vibrant and active community that continues to expand. This community

is unique in that the people who live in the neighbourhood built it, and the project was both entirely self-initiated and largely self-financed as well. The self-financing aspect of the LAEV is an area which other eco-villages, such as the WSEV would do well to study further.

I found several similarities between this project and the WSEV project. Unlike Bamberton, this is a redevelopment of an inner-city neighbourhood, and was largely self-financed. Also, the social bonds between the residents are a key feature of the LAEV, as they were intended to be in the WSEV.

Lois Arkin describes herself as one of the pioneers of this eco-village, which, as of 1997, contained some 500 residents of varying ethnic and economic backgrounds. This community is located in two city blocks west of downtown Los Angeles, and was founded in 1993. The purpose of this community, as stated in the Los Angeles Eco-Village Overview is "to demonstrate a healthy and regenerative urban community in which the ecological, economic and social systems in the neighbourhood are integrated for long-term health and sustainability" (Arkin, 1999, [http://www.ic.org/laev/.](http://www.ic.org/laev/))

The community has slowly grown, and seems to be without much of the formal organization that characterizes other projects. Arkin writes that "a group of six intentional neighbours provides leadership and coordinates Eco-Village activities. The group also "encourages others to participate" (Arkin, 1999, <http://www.ic.org/laev/>)

There are a number of projects underway in the community, in areas such as transportation (reducing automobile dependency), food production (aiming for increased neighbourhood food production and a buying co-op), retrofitting to reduce both energy and water consumption as well as streetscaping to calm the traffic. A sense of inclusiveness and

community are stressed throughout all the Eco-Village, and efforts are made to increase social contact through the residents.

While Los Angeles is a very different environment than Winnipeg, the Westminster Square project could develop along the same lines, provided that a committed group of residents was in place from the beginning. The organic process by which the LA Eco-Village emerged is very different from the way the Bamberton process was organized, but the end result (a sustainable community) is the same, although Bamberton did not reach this goal.

2.1.6 Transit-Oriented Developments

There is a final point in the first section of this literature review to examine, which comes from Peter Calthorpe's The Next American Metropolis. Calthorpe develops a set of guidelines for what he calls "Transit-Oriented Developments." He feels that "communities should be compact, diverse and urban, and their natural systems should be integrated at a regional scale, not necessarily in each block and neighbourhood" (Calthorpe, 1993, 44). This statement suits the nature of the Westminster Square Project, which also contains a transit stop within its boundaries - something with which Calthorpe could identify. His description of what he sees as an alternative to current building patterns, namely "neighbourhoods of housing, parks and schools placed within walking distance of shops, civic services, jobs and transit" (Calthorpe, 1993, 16) already exists in Winnipeg's Wolseley neighbourhood, and indeed in many other older neighbourhoods across North America.

2.1.7 Sustainable Communities: Key Points

The examination of these works in the field of sustainable communities has identified a number of key points relevant to this project. First of all, despite the wide range of labels (eco-village, green city, etc.), sustainable communities share a number of common features. These features, which differ somewhat between theories, can be gathered under the banner of "sustainable communities," as a collective label for the theories and ideas.

There are many shared elements of sustainable communities and a brief list of the most common ones is provided here.

Elements of Sustainable Communities

Commitment to minimizing human impact on the environment
Strong sense of community among the residents
High density of dwelling units
Mixed-use development
Use of technology to reduce energy consumption
Use of innovative design forms to reduce energy consumption
Greater reliance on alternative methods of transportation

2.2 Barriers to Sustainable Communities: Published Examples

Moore writes that "a space exists between knowledge and action in which barriers operate" (Roseland ed., 1997, 168). The obvious barriers, as described in much of the literature, are often fairly mundane - zoning regulations, height restrictions, and restrictive land-use patterns. However, other barriers include attitudinal (i.e. public perception and acceptance) as well as financial barriers. Although all of these are important in the context of

eco-developments, this study focuses on regulatory barriers, or specifically, barriers which arise from regulations. Other barriers are important, but I examined them only as they related to the context of regulatory barriers. These other barriers could form the basis for similar research. This section of the literature review is intended to be an examination of documented regulatory barriers.

2.2.1 Barriers to Sustainability: General Overview

Perhaps one of the most thorough overview of barriers to implementing sustainable development in general is found in Discussions on Decision-Making Practices for Sustainable Development, published by the National Round Table on the Environment and the Economy. While intended for policy-makers, the report outlines several barriers to implementing sustainable development.

Of particular use to this research is their outlining of the barriers to sustainability which are found at the municipal government level. The municipal barriers outlined in this report are not always specifically regulatory in nature, but provide an overview of some of the challenges faced during the development process. They are as follows: NIMBY (Not In My Backyard) syndrome, institutional inertia, poor consultation [of the stakeholders], [interdepartmental] 'turf wars', limited funds and time frames (NRT, 1991, 42). Of the broader barriers outlined in this work, several are also applicable to the community context, including: legislative and regulatory barriers, a "limited understanding of risks, costs and benefits" (NRT, 1991, 43), low stakeholder trust, and resistance to change (NRT, 1991, pp. 43-44).

In the context of sustainable communities, these can be interpreted as a lack of understanding of the nature of sustainable development/communities, the lack of a suitable process for bringing about changes, few funding sources for innovative projects (although it is worth noting that the LAEV was virtually self-financed) and a sense of inertia on the part of the stakeholders (i.e. "[T]his is the way we've always done it, why bother changing?").

2.2.2 Barriers Case Study: "Clouds of Change"

A more specific piece is found in Eco-City Dimensions, a collection of articles including a piece by Moore, who writes about the struggle faced by Vancouver's Task Force on Atmospheric Change. This non-partisan task force, composed of a wide range of local residents, was charged with the task of "identifying Actions that the city could take to reduce its contribution to global climate change" (Roseland ed., 1997, 167). The report produced was entitled "Clouds of Change" and was released in 1990. It contained a number of recommendations, which, if acted upon by the city council, would have made Vancouver a healthier, more sustainable urban place. Although it was supported by the city council, it did not, according to Roseland, produce "the types of changes necessary for a healthy community" (Roseland ed., 1997, 168).

Moore interviewed a number of individuals who had participated in the process asking them to identify what they felt the barriers to the implementation of this report were. According to Moore, this process demonstrated that even where there is agreement at a local level as to what changes need to take place, there are still other barriers to be faced. Gaining the support of stakeholders is only the first step.

One of the sets of barriers to the implementation of this report is described as the institutional/structural barriers. She describes these barriers as affecting the organizational operations of public institutions (Roseland ed., 1997, 170), including "limiting of jurisdiction" and "conflicting regulations" (Roseland ed., 1997, 170), both of which were significant in this practicum research. Before finishing with the discussion of Moore's work, I think that it is worth pointing out that regulatory barriers are only one of the topics that Moore studies. She gives equal weight to perceptual/behavioural barriers and economic/financial barriers. These barriers are also significant in innovative developments, although they are beyond the scope of the present work.

2.2.3 Barriers to Sustainable Communities: Canadian Examples

In her paper "Removing Regulatory Barriers to Sustainable Community Development: Examples From The A-C-T Program," Julie Tasker-Brown writes of the barriers facing sustainable urban development in Canada. She traces the root of the problem to "how we develop land and construct housing" (Tasker-Brown, 1993 , 212), and goes on to state that "not only do current planning regulations not encourage sustainable housing and community forms, they can actually inhibit their development" (Tasker-Brown, 1993, 212). From her initial statements, Tasker-Brown goes on to identify seven key barriers to sustainable community development, as follows:

- 1) Regulatory barriers which limit opportunities for intensifying existing residential areas
- 2) Regulatory barriers to mixed-use
- 3) Excessive and inflexible development standards for new projects
- 4) Regulatory barriers to renovation and adaptive re-use of existing buildings

- 5) Regulations which have not kept up with advances in construction materials and techniques.
- 6) Protracted and cumbersome permit application and inspection approval processes
- 7) The multi-layers and often uncoordinated regulatory jurisdictions involved in development approvals

(Tasker-Brown, 1993, 213)

Of these seven barriers, only the third is not applicable to the project being discussed here.

Due to a zoning variation, the second barrier is not applicable. However, all seven of these barriers form a large part of why Canadian communities continue to be built in unsustainable fashions.

After identifying the problems, Tasker-Brown describes each barrier in-depth and provide a handful of possible solutions for several of them. She goes on to discuss the role of the A-C-T program in challenging these barriers, providing examples of where the boundaries have been tested. Finally, she concludes by stating six key points which have become apparent over the years that A-C-T has been examining regulatory barriers.

They are as follows:

- 1) Regulatory change is slow
- 2) Regulatory change is incremental
- 3) Cooperation and collaboration among key players is crucial to successful regulatory reform
- 4) Equally, or even more than the above, a highly committed municipal staff and council is important to successful regulatory reform
- 5) The vested interests of the key players can impede regulatory reform
- 6) Private-sector builders find it difficult to take the risks associated with regulatory change.

(Tasker-Brown, 1993, 213)

From her work, it can be seen that a number of regulatory barriers do exist for the development of sustainable communities. Despite the fact that these barriers have been identified (on a general scale - individual jurisdictions still differ), there has not been a great deal of movement towards their removal. Some small successes have occurred at the local level but a great deal of work remains to be done. Tasker-Brown's identification of the lessons learned is perhaps the most valuable part of this document. By outlining not just the changes that need to take place, but the climate in which these changes must occur and the impediments to creating this climate, she has examined how the barriers can be overcome.

2.2.4 Barriers: Further Examples in the Literature

In "Alternative Design for Sustainable Suburbia," Steve Pomeroy examines the "Metropolitan Purlieu" model of sustainable community design, and focuses on the barriers to this particular form of design. The Metropolitan Purlieu, developed by Ian MacBurnie for a CMHC document ("Reconsidering the Dream: Toward a Morphology for Mixed-Density Block Structure in Suburbia") is noteworthy for examining the single detached dwelling and its attempt to "integrate this building form into a higher density and more compact pattern of development" (Pomeroy, 1993, 57).

While not termed as an "eco-village," the innovations in the concept of the Metropolitan Purlieu (such as higher densities, use of main streets and what MacBurnie calls "mixed density pockets" (Pomeroy, 1993, 58) demonstrate its compatibility with the concept of sustainable communities.

Specifically, Pomeroy examines seven major barriers to implementation of this concept which are general enough to be applied elsewhere, and which in fact share much with

other studies such as that of Tasker-Brown. Pomeroy conducted two workshops with various industry professionals and private citizens and recorded their observations to identify the barriers. They are as follows:

- 1) Higher development costs [perception of]
 - 2) No potential for future subdivision of the land
 - 3) Market won't accept the mix [of residential tenure and income levels]
 - 4) Narrow streets/setbacks create problems for snow removal
 - 5) Consumer demand
 - 6) Scale [of the project]
 - 7) Regulatory process
- (Pomeroy, 1993, 61-63)

Pomeroy is able to refute most of these arguments, and identifies the consumer as the final step in the process. He feels that the barriers are legitimate, but in many cases are "premised on the status quo" (Pomeroy, 1993, 63). He believes that it is natural to challenge innovations and change, and that in order to embrace innovation, "we have to adopt a more conciliatory approach" (Pomeroy, 1993, 63). Pomeroy also believes that if all regulators can work together, "the risk can not only be shared, but reduced" (Pomeroy, 1993, 64). He also states that "the decision comes down to the consumer" (Pomeroy, 1993, 64), and he is right. This is perhaps the most significant barrier to the development of sustainable communities, not to mention urban form and land-use planning. Although it is not within the scope of this project, it is worth noting that no eco-development or sustainable community will work if consumers do not "buy-in" to the project.

Another barrier is also found in Pomeroy's work. He refers to a project in Maryland called Kentlands, which suffered some setbacks during the development. This resulted in "the lender taking over the project and selling off a chunk to a shopping centre developer - the

antithesis of Duany's TNP philosophy" (Pomeroy, 1993, 63). The original goals of the project were compromised, but Pomeroy is unsure if this changes the status of Kentlands. It can be argued that this illustrates yet another barrier to eco-village development, namely a lack of sufficient private and/or public funding, and that sometimes this barrier can result in a dilution of the original project goals and ideals.

Moving on to other barriers, there are a number of examples of specific case barriers beyond the ones discussed above. The Hygeia report contained an examination of the barriers faced by the case studies included in the report. For example, when examining the Bamberton project, the authors noted a number of barriers. These barriers included; public opposition, a highly-political development process, the use of the standard B.C Municipal Act approval process and accusations of political favoritism from opponents of the project and of the NDP government.

The Cornell project (in Markham) found that the various reviewing agencies had a very narrow view, and were only concerned with how the project would affect them. The developers also found that the innovative plan "challenged standard development guidelines and practices" (Hygeia, 1995, 77). Although these "standard guidelines" were not spelled out, one can imagine that the authors are referring to contemporary standards for suburban development, namely density, street width and frontage, among others. The developers were able to overcome this barrier through what the authors referred to as "good planning practice" (Hygeia, 1995, 77).

Another relevant source of regulatory barriers is a document entitled "Regulatory Obstacles to Innovative Housing", which was written by Angela Evans, Christopher Mattock and David Rousseau for CMHC in 1997. This document outlines the barriers "encountered by

designers, builders and home owners during the construction of homes incorporating healthy housing features” (Evans et al, 1997, p.4). While the authors do not define “healthy housing”, choosing instead to state that healthy housing “in its broadest sense...includes an emphasis on environmental responsibility and human health” (Evans et al, 1997, p.5), both healthy housing and eco-developments represent non-traditional, or innovative forms of construction. As a study of barriers to innovative forms of design and construction, this work is valuable.

The authors present a number of relevant points through the course of this document. They begin by stating that innovation in a highly regulated field such as housing, is “constrained by existing codes, bylaws and policies”, although, they add that “this is not because regulation is designed to limit innovation...it is because new concepts...were simply not considered when the regulations were developed” (Evans et al, 1997, p.8). This does not mean that codes and other regulations do not need to be changed. The designer of the North Mountain House (an innovative house in Nova Scotia), stated in an interview with the authors that “codes must be overhauled to include other issues besides immediate health, safety and structural sufficiency” (Evans, et al., 61).

Another important point, which does not apply directly to the WSEV but is worthy of further study, comes in the discussion of housing innovation in subdivisions (section 4.11). In terms of eco-developments, new subdivisions offer a chance to begin from the ground up, as opposed to the WSEV, which is a retrofit. The fifth chapter of this document outlines the findings and observations made by the authors. This is where they provide personal insight into the various regulatory barriers, and give examples of successful challenges. Elements of this chapter would have been very helpful had this document been available during the WSEV consultation process. For example, the authors outline how applicants should prepare for

challenges, and stress that the process will take time and that there is no guarantee of success (Evans et.al, 1997, p.77). They urge applicants not to circumvent the regulatory approval process, but rather to take the time to prepare their arguments, to provide supporting documentation, and to involve professionals in their application (Evans et.al, 1997, p.75). They also point out that applicants who may believe that codes do not apply to them because their application is innovative in some way will encounter troubles, as will applicants who install components of their project before receiving approval from the appropriate regulatory officials (Evans et.al, 1997, p.76).

In their conclusions, the authors synthesize their findings and present a number of suggestions for regulatory reforms. Many of these are similar to the findings of the WSEV project team. For example, the authors agree that codes need to be changed, although they argue that existing codes are capable of handling innovation (Evans et.al, 1997, p.76). They also believe that changing codes is beyond the scope of any one project, and must be initiated within the regulatory body, or through the Actions of an outside body, such as “an organized group of citizens or professionals” (Evans et.al, 1997, p.77).

Unfortunately, one omission in Evans’ document, although it is perhaps beyond the boundaries of their work, is a discussion of market forces and the role they play in innovative developments. As the WSEV project team discovered, the market is not always capable of accepting innovation. People may simply not want to have an innovative feature such as a greywater recycling system, and may only choose to accept elements of what a developer or designer would consider to be “innovative”. This is key to the implementation of projects such as the WSEV. Eco-village developers (and developers in general) have to be aware of what people are willing to accept. This doesn’t mean that the market won’t accept innovation,

just that the innovative concepts of a developer, or as was found in this case, the 1996 WSEV vision, are not always acceptable to the existing market. This is an area of eco-village research beyond the scope of this practicum which requires a substantial amount of further study.

Finally, an additional document, which provides an overview of Canadian work in the field of urban sustainability, along with information about barriers, challenges, and solutions, is The Ecological City, which was prepared for CMHC by the Federation of Canadian Municipalities in 1995. This document was Canada's submission to the Organization for Economic Co-Operation and Development (OECD) Urban Affairs Group. It was intended to "help OECD member countries identify innovative...strategies to address the growing pressure ...with their urban regions" (FCM, 1995, Summary). As such, it provides not only an overview of Canadian Activities in the area of urban ecological issues, but also outlines challenges and opportunities in this area. It does not go into the depth explored by Tasker-Brown, but does identify social values and institutional frameworks as two significant challenges.

In terms of providing an overview of Canadian activities, with only two case studies provided, this document does little more than prove that Canada lags behind other countries in this area. The authors stress the importance of social values as a challenge to achieving urban sustainability. They point out that much of what has been implemented (which, at this time, was very little), "has not yet required fundamental changes in society's values and beliefs," but argue "significant progress toward urban sustainability...requires that progress be made on changing social values" (FCM, 1995, 60). The authors then go on to outline the values and beliefs which were identified as significant challenges during the development of this document.

There are eight values identified in this document, many of which became apparent during the WSEV consultative process as well. They are as follows:

- Consumption/materialism
- Ecological awareness
- Short-term thinking
- Individual over community interests
- NIMBY (Not in My Back Yard)
- Reliance on automobiles
- Work/home dichotomy
- Demand for single family dwellings

(FCM, 1995, pp 61-63)

Having identified these challenges, the authors go on to outline a number of ways to address these challenges. While changing social values is beyond the scope of this work, one of the solutions identified was the changing of institutional systems to allow for integrated decision-making structures and processes to help achieve sustainability (FCM, 1995, 69).

2.3 Sustainable Communities and Barriers: Conclusion

A final note is found in Tindal and Tindal's Local Government in Canada, where, in reference to local governments, they state that "too often they have accepted reform only when sufficiently threatened or bribed" (Tindal and Tindal, 1990, 350). The term "reform" is used largely in reference to local government structure but the authors go on to state "it also refers to a myriad of internal, but equally important, changes in operating practices and procedures" (Tindal and Tindal, 1990,350). When this statement is put in the context of eco-

village development, the prospects for government-initiated regulatory reform do not look good. If nothing else, this shows the value of projects such as the WSEV. Thus, according to Tindal and Tindal, it appears as if governments will not undertake reforms (such as those outlined in this practicum), unless they feel threatened, or unless another inducement is offered. The authors of the FCM report support Tindal and Tindal's view of government-initiated change, stating "the public has been a driving force for change...at the municipal order of government" (FCM, 1995, 71). Perhaps instead of regulatory reform, a campaign of public outreach, consultation and education as to the real costs of issues such as urban sprawl and other unsustainable practices needs to be undertaken to drive governments to change? Again, a full examination of this question is beyond the scope of this work, but the role of the public in the initiation of regulatory reform again provides an opportunity for further research.

To summarize this section of the literature review, there are many barriers to eco-village development. For the purposes of this work, the regulatory barriers are the most important but the others are important as well. Case studies have proven that barriers exist, and the failure of many projects, most notably Bamberton, proves that if the barriers are not taken seriously, or are too difficult to overcome, the project will not be realized. However, many of the barriers are not insurmountable, and as this project is dealing solely with regulatory barriers, it will become apparent during the course of this work that the reason why many of the specific barriers encountered during this research exist is simply because they have not yet been challenged. It is hoped that this work will constitute a challenge to the regulatory barriers that impede the development of sustainable communities in Winnipeg. Other barriers, such as social values, financial barriers and technological challenges are beyond the scope of this project, but provide opportunities for further research.

Chapter 3 – Research Methods, Development Process and Final Concept

Using examples from the literature, the previous chapter examined the concept of sustainability in the urban context, with particular reference to eco-villages or "eco-developments." This chapter examines the process by which the stakeholders in Westminster Square developed a concept for the eco-village. This is a crucial stage in the development, as this concept would in part determine the barriers to such a development. In addition, the research methods used during the consultative process are examined in this chapter.

3.1 WSEV Consultative Process

In order to identify exactly which regulations would be challenged, the project team worked with all parties to determine the shape of the proposed eco-village. While some regulatory barriers can be identified without a specific project proposal, the clients (specifically A-C-T) required a proposal as part of the study.

Without effective and inclusive participation, it is doubtful that a small-scale community based project like the WSEV could succeed. To ensure an effective and inclusive process, a participatory process was developed, which identified several distinct approaches for the project to follow. The different ideas and proposals for the project were brought to the attention of current and prospective residents, as well as the business owners and landlords on the site. In addition, a number of relevant government departments were consulted.

3.1.1 Components of the consultative process

The consultative process took the following form:

- 1) Public meeting (held in October 1997)
- 2) Distribution of materials (pamphlets) door-to-door (December, 1997)
- 3) Meeting with all business owners (August, 1997 and January, 1998)
- 4) Distribution of survey and additional materials (May-June, 1998)
- 5) Individual meetings with interested parties (August, 1997 - August, 1998)
- 6) Meetings with government representatives (Aug - Dec, 1997)

3.1.2 Residents

With so many of the units in the site currently occupied by rental tenants, rather than being owner-occupied, consultation of the residents, rather than merely the building owners, as key stakeholders was a priority during the study. This was done to determine their support of and commitment to the WSEV project. To this end, after a number of attempts at contacting residents through (poorly-attended) meetings and door-to-door efforts, a survey was developed (see Appendix B). This survey was distributed to the residents along with an information package (also in Appendix B). The project team also kept the residents involved through door-to-door discussions and information pamphlets.

Over the course of the project, two-thirds of the initial residents who had worked with the project team left, and were replaced by new residents. One of the residents who took part in the project, suggested that the lack of widespread resident input did not demonstrate a lack of interest in the project. Rather, this individual believe that it demonstrated a feeling or belief that because many of them [the residents] were not "attached to the site by ownership or a sense of community," they may have felt that their input would not be valued, and thus decided not to take part. Despite these difficulties, a number of residents did participate, and proved to be a valuable source of information on proposed elements of the WSEV.

3.1.3 Prospective owners

Another important component of the consultative process was in seeking out prospective owners or people who would be interested in moving into the WSEV. In order to contact potential owners, posters were placed around the site, and a number of non-residents who had previously expressed interest in the project (through attendance at workshops and word-of-mouth) were contacted to determine their support for the project, and their visions of what they would like the project to become. A total of eight persons indicated an interest in the project, and their input was considered.

3.1.4 Current property owners

The process of consulting current property owners, both residential and business, proved to be problematic. Despite repeated attempts to contact all seven of the property owners, through letters and phone calls, only three showed any significant interest in the project, and time constraints prevented two of these from assisting to the extent they would have liked to. The low response rate from current property owners makes the insight from this part of the process somewhat weaker, but, as one of the residents pointed out, you can't force anyone to become involved.

Of these three, only the proprietor of the Sheep Boutique, at 153 Evanson, was able to work with the project team at any great length. The design team used her house as a model when they developed a renovation model for the A-C-T project. She provided a number of interesting concepts for the project, many of which revolved around increasing the livability of the site (and indirectly increasing traffic to her business). The other two property owners, while interested, did not have the time to participate in the project but were kept informed as

the project progressed. They both expressed support for the project, and would like to see it succeed.

3.2 Consultation with provincial government departments

The two levels of government contacted were the City of Winnipeg, and the Province of Manitoba. The City is the primary regulatory body involved in this project, but several provincial departments, although they lacked the same regulatory powers as the City, were key sources of information as well. Three provincial departments; Energy, Mines and Resources, Urban Affairs and Manitoba Environment were consulted. Of these departments, Energy, Mines and Resources took the most interest in the project, providing material and suggesting some ideas for the project. They have the most direct involvement in the project, due to their work on the R-2000 energy efficiency program. It is worth noting here that Manitoba Environment and Energy, Mines and Resources have been combined into the Department of Conservation, while Urban Affairs is now part of the Department of Intergovernmental Affairs. Urban Affairs, while interested, declined to take part in the project. They felt this project was more suitable for examination by the City of Winnipeg and the Energy, Mines and Resources Department. Manitoba Environment simply referred the project team to the Energy, Mines and Resources Department.

3.2.1 Consultation with Manitoba Hydro

Manitoba Hydro was contacted during the key informant interview process, but as the neighbourhood in which the WSEV is located is within the jurisdiction of Winnipeg Hydro, they did not take part. They did not discuss any plans for alternative energy development in

the province nor were they forthcoming with their views on the feasibility of the energy efficiency and alternative energy considerations of the project. The explanation provided was that since this project was in an area serviced by Winnipeg Hydro, they did not want to become involved, as they felt this could create a dispute between the two corporations. This illustrates one barrier, namely the fragmentation of jurisdiction or determining who has the jurisdiction over any given area. This is unfortunate, because Manitoba Hydro is a valuable resource with respect to providing alternative energy supply and energy conservation. They have published several documents on the feasibility of solar and wind power in Manitoba.

The issue of fragmentation of jurisdiction is compounded when bringing different departments together. In this case it was a civic departments and a provincial Crown Corporation with similar functions but different service areas. However, when bringing together different departments with different functions, such as health and housing, the problem is even worse. Innovative projects such as this one require a high level of cooperation from many different departments, and during this process, it became evident that some of these departments are unable or unwilling to cooperate.

3.3 City Departments

The departments of the City of Winnipeg that were consulted during this process are as follows. Each will be addressed individually:

- 1) Community Planning
- 2) Streets and Transportation
- 3) Waste and Waterworks
- 4) Zoning
- 5) Winnipeg Hydro

3.3.1 Community Planning Department

The Community Planning Department had been involved in this project since 1996 through a senior staff member, who had been part of the original volunteer project team and co-author of the funding request to A-C-T. He, and others in the Department, were consulted regarding many of the features, and provided information over the course of the project.

3.3.2 Waste and Waterworks Department

A senior manager at the Waste and Waterworks department was very interested in the project, specifically in the proposed greywater collection system. He directed the project team to a number of specific barriers and possible solutions, and cooperated in providing maps and data regarding sewer upgrades in the area.

3.3.3 Property and Development Services Department

The zoning officers for the City's Property and Development Services Department were able to provide most of the information regarding municipal regulations and identifying potential barriers to the proposed elements of the WSEV, but they did not suggest any new initiatives to be included in the WSEV. The role of this section of the Department is primarily a consultative one, as they are not normally involved in new initiatives or policy development. Therefore, this department was only consulted with regards to barriers.

3.3.4 Streets and Transportation

Streets and Transportation officials were consulted regarding the acceptability of measures proposed regarding traffic calming measures and the implementation of expanded

transit service in the area. Again, they viewed their role more as a consultative one, and did not suggest any new initiatives either, although they were helpful and provided information.

3.3.5 Winnipeg Hydro

As discussed earlier, Winnipeg Hydro was consulted regarding the provision of energy from alternative sources to the site. The policies of this utility do not allow for the provision of energy from renewable, relying instead solely on hydro-electric power, which they argued was a source of renewable, environmentally-friendly energy. Repeated phone calls were necessary before an individual who understood the concept of alternative energy provision was reached. A manager with Winnipeg Hydro informed the project team that Winnipeg Hydro does not currently have a policy regarding alternative energy. He pointed out that if the project was taken off the grid, current regulations would require that the housing units be classified as unfit for human habitation.

3.4 Problems with City and Provincial consultation process

From the government consultation process, it became apparent that (with the exception of Energy, Mines and Resources, and to a lesser extent Waste and Waterworks and Community Planning), government departments in Manitoba, both civic and provincial are either not interested in, or are not able to examine innovative building or planning techniques of the type outlined in the WSEV project. This is not to fault the individuals who were consulted, many of whom expressed interest in the project, and asked to be kept informed. The problem is in part with the current regulations, which seem restrictive, or perhaps with a corporate culture which discourages innovative thought among regulatory officials and other

employees. The restrictive regulations will be discussed further in Chapter Four of the practicum, which deals with the specific barriers encountered, and in Chapter Five, which recommends regulatory changes to address the barriers encountered during the course of the project.

Finally, there appears to be a lack of communication between different departments, especially in the municipal government. With the exception of the Community Planning Department, none of the other City departments made an effort to address or examine issues that related to anything outside of their sphere of influence, preferring to keep a narrow viewpoint. While departments should focus mainly on their own areas of work, the concept of urban sustainability requires a holistic view, and bringing about this way of thinking seems to require a tremendous amount of work by anyone who is attempting to submit a proposal with elements that challenge existing regulations.

3.5 Results of the consultative process

In determining the final shape of the WSEV, each group consulted was asked to identify the elements that they would like to see in the final project, keeping current technological constraints in mind. As each group had different goals, the elements are grouped under three headings. First, the information supplied by the residents is listed, then the results of the consultation of business owners and the elements in the last section come from the interviews with key City and Provincial agents.

3.5.1 Results of consultation of the residents (current and prospective)

Common space in centre, used for farmer's market and public gardening
Renovation to R-2000 standards for all units
Installation of innovative water conservation technologies, such as greywater recycling
Formation of an "eco-village council"
Shared garden space
Shared carports
Legal authority to construct/operate "granny flats" on properties
Operation of home offices, home-based businesses without the need for zoning changes
Use of alternative energy sources such as wind and solar power
Incorporation of traffic calming devices such as speed bumps and narrowing of the roads
Not interested in alternative sewage technologies
General support for ideals of eco-village

3.5.2 From business owners

Common space also a priority
Use of vacant corridor between 869 and 871 Westminster
Boulevard plantings around entire block
Space on front sidewalk for people to sit and have coffee
Not interested in traffic calming, fear this would cause loss of business
Not interested in increased transit (bus) traffic, fear that the noise would disturb customers
Alternative energy not a priority
Interested in continuing with existing xeriscaping along street, would like to see it extended

3.5.3 From government agents (Provincial and City)

Innovative water conservation technology, especially greywater recycling and low-flow faucets/showers (City)
Use of R-2000 standards for building renovations (Province)
Provisions for mixed-use zoning (Province/City)

Granny flats and home offices (Province)
Incorporation of traffic calming features onto side streets (Province/City)
Greywater recycling suggested (Province)

3.6 Elements of the Westminster Square Eco-Village

Following the results of the consultative process, and based on other existing eco-villages, it has been determined that the Westminster Square Eco-Village would contain the following innovative elements. The elements outlined here in section 3.6.1 are perhaps not as innovative as they could be, but they represent the regulatory limits set by the two regulatory bodies, as well as the limits of acceptability set by the residents and tenants and by the potential financial feasibility of the project. It is interesting to note that the original (1983) drawing included many more elements which would still be considered innovative in the current regulatory framework (fifteen years later). These were elements such as local food production, small animal husbandry, windmills on site and narrowing of all streets, not just one (see figure 1.1).

3.6.1 Physical Elements

Upgrade to R-2000 standards for all residential buildings
Use of solar panels as alternative energy source for carports and garages
Use of water-conservation technologies whenever possible
Use of recycled construction materials, recycling of all construction waste from the project
Transformation of centre square into a common space, with landscaping elements, and a public garden
Replanting of all boulevards with native plant species
Use of rain collection system for watering of garden/lawns
Removal of all parking spaces, construction of common carport on north side of project

Traffic calming/street widening along Evanson, to allow for further social interaction
--

3.6.2 Land Use and Zoning Elements

Mixed-use zoning to be allowed (within limits, as this already exists in part on the site)
--

Granny flats to be permitted where feasible

Use of traffic calming techniques to reduce traffic flow along residential portion
--

3.6.3 Social/Economic Elements

Formation of an "eco-village" council, to be made up of residents, tenants and business owners and including representation from the local resident's association, and the City.
--

Home-based businesses to be a priority
--

Local purchasing policy to be in effect during construction phase (all materials and goods that can be purchased locally will be)

Green purchasing policy to take effect as well (examining the environmental costs of materials, i.e. using sustainably harvested forest products)

Eco-Village Council and residents encouraged to use local currency units (CLU's) when possible
--

The final elements do not include any provision for alternative energy, despite the support shown for this by the residents. Also, the idea of a meeting space along Westminster for people to meet and have coffee was not included. The traffic calming elements were limited to only one street (Evanson), and the negative reaction to increased transit traffic meant that this element was not included as well.

3.7 Conclusion

By conducting an extensive consultation process, as outlined in this chapter, the project team and the different groups involved in the process (the stakeholders) developed the concept and form of the proposed WSEV. This concept formed the base from which

regulatory barriers were examined. Chapter 4 further examines the elements of the WSEV with regards to the regulatory barriers which may or may not exist to prevent implementation of the project.

An additional point must be made before the conclusion of this chapter, and that is the difficulties faced during the consultative process. While many of the people contacted were helpful, not everybody was interested in participating. Thus, this consultative process did not reach as many people as it was originally intended to. While the final shape of the WSEV is based on the input of many key informants and stakeholders, it is important to note that it is not a vision which encompasses all stakeholders, as some chose not to participate. This can be seen as a barrier in itself.

While significantly different than the regulatory barriers examined in Chapter Four, social barriers, such as a lack of participation by stakeholders form a substantial impediment to the development of projects such as the WSEV. Perks and Van Vliet noted that "sustainability and affordability together present major challenges to the common perception of what a residential community should look like" (Perks and Van Vliet, 1994, 85). In this case, one wonders if these challenges prevented some stakeholders from taking part, which would underline the need for additional public education before and during the consultative process, or a reduced expectation that all stakeholders should be interested.

Chapter 4 – Regulatory Review

The previous chapter outlined the process and research methods used to develop the WSEV proposal. In this chapter, I will examine the regulations that impact on the feasibility of the implementation of the proposal. The examination of the regulations will follow the format of the proposal, and each element of the proposal will be examined for regulatory barriers. The elements are, as outlined in the third chapter, divided into three separate areas; physical changes, social changes and land use and zoning.

4.1 Elements of Westminster Square – Revisited

I - Physical changes

a) Renovation to R-2000 standards for all units
b) Use of alternative energy sources
c) Installation of innovative water conservation technologies
d) Greywater recycling

II - Social changes

a) Formation of an eco-village council
b) Local purchasing policy

III - Land-use and zoning changes

a) Common space in centre, to be used for public gardening
b) Shared garden space
c) Collective carports
d) Legal authority to construct/operate "granny flats" on properties

e) Operation of home offices, home-based businesses without the need for zoning changes
f) Incorporation of traffic calming devices onto side streets
g) Use of vacant corridor between Prairie Sky and Sled Dog Music
h) Boulevard plantings around entire block
i) Space on front sidewalk for people to sit and have coffee
j) Provisions for mixed-use zoning

4.2 Regulatory Framework - Background

Regulations and by-laws dealing with land use and planning have been around since at least 1869, when New York City introduced zoning, which was originally intended to separate "noxious" industries from residential neighbourhoods (Wilson, et.al, 1999, p194). However, one of the legacies of separating land uses has been that, as Wilson points out, restrictive zoning can prevent compact and mixed-use development (Wilson, et.al, 1999, p194). In the City of Winnipeg, regulations fall under the control of a number of different departments and organizations. Zoning, land-use, waste and waterworks are controlled through the use of by-laws, which are administered by different departments of the city. Health and fire regulations are enforced through codes by their respective departments. And the building code is a province-wide set of standards to which all buildings must conform.

Another regulatory player, which has been mentioned only briefly to date, is Manitoba Conservation (an amalgamation of the former Environment and Energy, Mines and Natural Resources Departments), which oversees environmental safety through the entire province - including the City of Winnipeg. However, Manitoba Conservation would only become involved if pollution or other issues affecting water quality were examined, such as greywater recycling. It is unlikely that a small-scale project such as the WSEV would have a significant impact on water quality in the City. In regards to the use of solar or wind power, both

Manitoba Hydro and Winnipeg Hydro control regulations which impact on the use or incorporation of alternative energy sources.

4.3 Regulatory Controls on Westminster Square – Background

With regards to Westminster Square, there are a number of separate areas of regulatory control which impact on the proposed project. Regulatory elements such as fire and building codes are more general in nature, and are often non-negotiable – exceptions cannot be made. For example, if the fire code requires a certain number of smoke alarms per unit, it is unlikely that this regulation can be changed, under any circumstances. However, fire and building code regulations do not appear to pose significant barriers to the development of the eco-village. Land-use, zoning, health codes and policies related to energy provision do impact on the proposed project.

In order to determine which specific regulatory barriers could affect the proposed eco-village, the different elements determined through the consultative process were examined. There were a total of sixteen elements to the proposed project form, as outlined both in the third chapter and in section 4.1. In regards to some elements, there are no regulatory barriers that can be identified, but rather financial and social barriers (i.e. extending boulevard plantings). However, in regards to other elements, policy changes by the City of Winnipeg or other regulatory bodies could assist in circumventing the regulatory barriers.

4.4 Barriers to Physical Change Elements of Westminster Square

The sixteen elements of the WSEV, as outlined in the third chapter, and in section 4.1, are examined in this section for regulatory barriers. Each element is discussed in order,

beginning with physical changes, moving to the social changes, and concluding with the land-use and zoning changes. The first section deals with physical changes, to the site. These elements involve retrofitting, upgrading or installing new equipment (i.e. a greywater recycling system or a solar hot water heater).

4.4.1 Upgrade to R-2000 standards

Currently, there are no regulatory barriers that exist to the upgrading of older homes to R-2000 standards. So long as the upgraded house is built to code, and there are no zoning changes required (i.e. height restrictions, etc.), there are no regulatory barriers. However, the R-2000 code states that only a registered builder (one who has completed the required courses of study and has been certified) can legally build homes built to R-2000 standards.

Although not related to regulatory barriers, which is the focus of this chapter, with regards to the overall feasibility of the WSEV, it is worth noting that the financial barriers to the R-2000 upgrade are considerable. Aside from the actual purchase of the land and buildings, the R-2000 upgrade is likely to be the most costly part of the WSEV proposal, although in time, the upgrades will pay for themselves through a significant reduction in heating costs.

4.4.2 Use of alternative energy sources

While this item was identified as a desirable element of the eco-village during the consultation process, it is also one of the most problematic elements of the development. First of all, the participatory process did not come up with a more specific definition than “alternative energy.” The project team was reluctant to identify the type of alternative energy

(i.e. solar or wind), as this may not have been what the participants wanted. Therefore, discussions with City and Hydro staff were kept as general as possible, although it soon became apparent that significant regulatory barriers exist to the use of both wind and solar power.

There are no zoning or planning restrictions regarding alternative energy sources, although there are issues of concern for adjacent residents, namely noise and reflective light. City of Winnipeg staff identified one possible regulatory barrier here; the city's height restriction. This by-law could potentially impact any windmill development as a minimum height would be needed to make the windmill viable. Aside from this, there are no zoning or planning barriers. The regulatory barriers facing alternative energy sources lie in two areas. First, the City's Health Code states that all buildings must be connected to the power grid to be considered "habitable." If a building is not connected to the grid, it is considered "uninhabitable," and residents are not permitted to inhabit the building until it is connected to the grid. During a personal interview with a member of the City's Health Department, the individual stated that the department does not consider solar power or wind power to be sufficient, but would consider possibly examining a relaxation of their code to provide for such forms of alternative energy as a joint study with the utilities.

The WSEV site is located within the jurisdiction of Winnipeg Hydro. This is unfortunate in the sense that Manitoba Hydro is more interested in the provision of alternative energy, and has approved some developments in rural areas to supplement hydro power with the use of solar power. There are also more resources available from Manitoba Hydro (in terms of grants and support for demonstration projects). This goes back to the earlier discussion about the fragmentation of jurisdiction, and how this can A-C-T as a barrier.

When contacted, staff members from Winnipeg Hydro stated that no policy existed regarding the provision of alternative forms of energy to homes within the city limits.

Winnipeg Hydro does not allow for any alternative form of energy generation, be it solar, wind or any other source, to be connected to their grid at this time.

A manager from Winnipeg Hydro did say that there were certain conditions under which this rule could be relaxed. For example, if the energy source were entirely independent from the grid, such as using photovoltaic solar panels to charge car batteries in the winter, they would allow this. And, if individual homeowners wanted to connect a solar or wind power source to their homes, which would have to be connected to the grid for the reasons stated earlier, Winnipeg Hydro would have to test the equipment and ensure its compatibility and safety before they allowed this connection to take place. He said that the likelihood of any homeowners being successful in completing this process would be low.

In short, Winnipeg Hydro's policies (or the lack thereof) regarding the generation and supply of alternative forms of energy present a regulatory barrier to the WSEV. While in principle it is possible that an application to Winnipeg Hydro would be successful, the cost of purchasing solar panels (which would need to be physically present for Winnipeg Hydro to test them), is such that it would be advisable for the WSEV to set this objective aside until more solar-friendly policies have been developed by Winnipeg Hydro. One possibility would be to approach a supplier regarding a lease, or a loan of equipment as a demonstration project.

There is one possibility for avoiding Winnipeg Hydro's regulatory barriers, namely solar water heating. This involves mounting a solar collector panel facing south, and installing a system to use the collected energy to pre-heat water for household uses. A two-panel solar water heater is appropriate for two or more families and would not take up too much space.

4.4.3 Water conservation technologies

Four separate areas have been identified where water conservation technologies can be applied. They are: kitchen, bathroom, laundry and garden. None of these areas are affected by any regulatory barriers.

In the case of the kitchen, two areas were examined. The kitchen sink and the dishwasher are the primary examples of water use in the kitchen. Garburetors are also heavy water using devices, but as composting is an element of this development, garburetors are not used in this design. For the kitchen sink, an aerator reduces the amount of water used by up to 60%, costing anywhere from \$4.50 (US) to \$20 (US) by mail order or over the Internet. The "Incredible Tap Saver Deluxe," available at Winnipeg's Solar Solutions, costs \$8.77 (Cdn) and reduces water and energy use by up to 60%. Dishwashers are more problematic, but a number of models with reduced water use are available. In particular, the Miele Appliances "Turbothermic G 590 SC" uses only 4.7 gallons of water per wash. A number of other models come close, albeit at a premium cost. For such appliances, savings in energy and water costs offsets the higher initial cost.

In the bathroom, three possibilities for water conservation were examined as well. The toilet is easily dealt with by installing a toilet dam, which reduces the amount of water used (up to 12 litres per flush can be saved). These items are available for under \$10.00 at many Winnipeg stores. The sink is dealt with by installing an aerator, same as that used for the kitchen sink. Another option is to install a pipe leading to the toilet tank, so that water used in the sink is then recycled by storing for use in the toilet tank. Finally, for the shower, a variety of low-flow showerheads are available and can reduce water use by up to 12 litres per minute.

All items are available locally, with the exception of the sink/toilet tank recycling system, which is only available in the United States and must be specially ordered.

With regards to laundry, a number of water-conserving washing machines are available locally, albeit at a premium price. Both Sears and Frigidaire offer water-conserving machines, which often use less energy as well. Front loading machines conserve water use, and a retrofit of the homes here would include such units.

Finally, for gardens, two possibilities were examined. Greywater could be used as a method of water conservation (please see section 4.4.4 for an examination of this). The second possibility is the use of rain barrels connected to the eavestroughs to capture water for use in gardening. While this is dependant on available rainfall, many residents of the neighbourhood already use rain barrels and there are no regulatory barriers to this (although the City entomologist recommended stirring the water frequently to prevent mosquito larvae from hatching).

4.4.4 Greywater Recycling

Another suggestion was for greywater recycling. This can reduce the total amount of water used by residents, as less water from the supply is used, and less water is released to the sewer. While Winnipeg is fortunate in having a fairly consistent water supply, the City of Winnipeg is aware that with increased population and increasing water consumption per capita, the current supply via the Shoal Lake Aqueduct may become inadequate (City of Winnipeg, 1994). Therefore, it is advantageous for the City to reduce residential water consumption. Residential water use accounts for nearly 60% of current water use (City of Winnipeg, 1994). Measures to voluntarily limit water consumption are already in place (i.e.

recommending low-use toilets and showers), but greywater recycling is an area that bears examining. The Rocky Mountain Institute estimates that in a typical household, greywater can provide roughly 50 gallons per day for reuse (Wilson et.al, 1999, 229).

Greywater

Greywater is the less harmful wastewater produced in buildings, as opposed to blackwater, which can contain pathogens dangerous to human health. Sources of greywater include showers, baths, and washing machines (Isliefson, 1998, 4). Uses for greywater can include toilet flushing, watering plants and lawns, and washing automobiles. In particular, greywater can be directed to landscape/lawn irrigation. During dryer years, there is high demand on the water system in Winnipeg from lawn irrigation, and greywater could provide a solution, provided that it is separated from blackwater.

Currently, greywater and blackwater are combined in one waste stream and are directed to the water treatment plant. At the moment, City of Winnipeg regulations do not allow for the separation of greywater, as it is considered to be wastewater, and current bylaws require the disposal of all wastewater into the sewers. The City of Winnipeg Sewer Utility Bylaw (5058-88) states that all buildings adjacent to the main sewer must be connected to the sewer. And, since the existing sewer hookups do not allow for separation of greywater from blackwater, the dwellings and businesses of Westminster Square cannot, under current regulations, separate their greywater to be reused.

However, if an individual wanted to approach Waste and Waterworks with a proposal for a greywater separation unit, a variance could be issued, provided that the proposal included complete technical drawings, and had the approval of the Province of Manitoba's

Conservation Department, as well as the City of Winnipeg Health Department. While this provides an opportunity for the WSEV to bypass the City's regulatory barriers, it will be expensive and time-consuming to do so. This process will require a full technical proposal, which in turn would require a study to be carried out by an registered professional engineer. Even then, there is no guarantee that the proposal will be approved.

While a number of U.S states permit and even encourage the use of greywater, the majority of these states are located in arid areas, where water shortages have forced them to act. The only Canadian example of greywater legislation found is in British Columbia. Isliefson writes that "a proposed amendment to the British Columbia Plumbing Code would add a section entitled Recycled Waste Water Systems." This section would define wastewater more carefully, and set out specifications for materials and installation of wastewater recycling systems (Isliefson, 1998, 41). While Winnipeg is not located in an arid region, increasing pressure on the existing capacity make greywater recycling a viable alternative that the City would do well to examine.

Therefore, while Winnipeg may not permit the reuse of greywater under current regulations, there is a process available which would permit individual homeowners to apply for a variance which would allow them to have a greywater recycling system installed. Given the availability of technical information, and of relevant legislation in other regions, this does not appear to be a difficult regulatory barrier to overcome. The barrier here lies in the cost of overcoming the regulatory barrier and the time it would take to do so.

4.5 Barriers to Social Change Elements of Westminster Square

The second section focuses more on social changes which would occur in the proposed WSEV. While these may not seem as relevant from a regulatory point of view, they resulted from the consultative process and as such, are important elements of the overall WSEV proposal.

4.5.1 Formation of an "eco-village council"

There are no regulatory barriers to the formation of such a council, and indeed with the proposed condominium structure, such a council is necessary. However, a barrier exists in the precise legal powers of such a group. The Wolseley neighbourhood already has a resident's association, which deals with zoning, planning and community consultations in the neighbourhood. This group works closely with the area Councilor, and it is possible that they may object to the formation of another residential group within their legal boundaries. There has been a precedent set with the formation of the East Wolseley Resident's Association, which was formed to deal with issues specific to the eastern section of the neighbourhood. The City does not have any rules to determine how many groups can be present in each neighbourhood, so there are no regulatory barriers to the formation of an eco-village council, and, as stated above, a precedent already exists in Wolseley.

Provided that the eco-village council works closely with the Wolseley Resident's Association, and co-operates on matters of jurisdiction with them, any conflict should be manageable. Potential conflicts could arise if the WSEV council chose to work around the

Wolseley Resident's Association, and deal with matters that could potentially affect the entire neighbourhood, and this is for the resident's council to work out.

4.5.2 Local purchasing policy

From a regulatory point of view, a local purchasing policy is not an issue. A local purchasing policy means that the following guidelines are respected when purchasing items for the eco-village (including purchases of equipment and material during the construction process). While premium prices are often paid for such materials, the resulting social benefits are in harmony with the ideals of the eco-village.

These guidelines were developed during the consultation with residents, and are as follows:

- Items will be purchased in the neighbourhood when possible.
- Beyond this, items will be purchased from locally owned stores,
- If this is not possible, items will be purchased from nationally owned stores (Canadian-owned chain stores).
- Items will be purchased from multi-national chains only when no other choice exists.
- During the purchasing process, performance aspects of the item in question will be taken into consideration, including (but not limited to) the country of origin, the method by which it was produced, the company which produced it and other considerations to be determined by the residents of the WSEV.

4.6 Barriers to Land Use and Zoning Change Elements of Westminster Square

The third section in Chapter Four deals with land-use and zoning changes, which often require changing City regulations. This is an area where regulatory barriers come into play, although, as the following section demonstrates, the regulations do not prove to be as significant a barrier as I had initially perceived.

4.6.1 Use of common space in centre for a public garden

As the common space here is considered private property, there are no regulations preventing residents from utilizing the space as a garden. City regulations only come into effect if permanent structures are built. However, a senior planner with the City of Winnipeg, did point out that this activity would require the cooperation of all residents of the eco-village development, including the owners of the commercial units, so the barriers to this Activity would be social, rather than regulatory.

One possible concern is the alley which exists behind the apartment building. This is on private property, and at the moment, is used by vehicles making deliveries to the Wolseley Elm restaurant. In order to make this space into a public garden, it would be necessary to negotiate with the owners of the restaurant regarding access by delivery vehicles, and with the owners of the alley as well.

As to the planting of a garden in the common space, so long as there are no structures in place, it is not affected by City rules. The garden must be on property owned by the Eco-Village, and if other property is involved, agreements must be made with the other property owners.

One issue that may arise is the use of a compost pile. In the past, (the now-defunct) Harvest Collective composted their spoiled produce and other organic wastes. The City Health Department ordered them to stop composting on the grounds that their pile was a risk to public health, as it had developed a strong odour and was attracting pests. Admittedly, the Harvest pile was larger than the average compost pile would be, and residents would ensure that the compost was kept contained in a bin. Many Winnipeg gardeners operate similar compost bins with no problems, and as these compost bins will be on private land, there should be no health issues, provided that they are properly maintained.

4.6.2 Collective carports

The elements of the site include collective carports along the north side of the development. From a regulatory aspect, this is difficult because the location involves two separate properties. As Winnipeg winters are often cold enough to require cars to be kept inside garages, this would also involve a permanent structure which would cross property lines. Regulatory barriers would then come into effect. The City regulates permanent structures, and a permanent structure crossing a property line (as the proposed carport would), would also require a yard variance, in addition to having the building plans approved by City staff.

A variance would not be difficult to get, according to City staff. Since the carport will be located on private property it is likely that residents will be allowed to build a collective carport, provided of course, that it complies with the relevant codes.

4.6.3 Legalization of secondary dwelling units

Only one of the buildings on the site would require permission to add a secondary dwelling unit. The house at 155 Evanson is currently a single family dwelling, and would require a zoning variance to add another residential unit to it. The entire site is zoned commercial and this would not challenge current regulations regarding residential density. As all other dwelling units on the site are multi-family, an on-site precedent has been set, and City zoning officers could not see any problem with granting a variance for a secondary unit in this building. The issue of secondary dwelling units is one that the City is working on, and new regulations regarding secondary dwelling units are expected to be in place soon.

4.6.4 Operation of home offices, home-based businesses without the need for zoning changes

City of Winnipeg bylaws allow for home offices or businesses without the need for a zoning variance, provided that the offices are non-retail, have no employees other than family members or residents of the unit, and are less than 400 square feet. For example, a lawyer, writer, computer consultant or accountant could easily work out of their home without requiring any type of regulatory approval. However, if the home business is retail in nature, a conditional use approval is required. If the business expands beyond 400 square feet, or requires employees from outside the family or unit residents, a zoning variance is required, and the property will have to be rezoned for commercial use. The site is already zoned commercial, so such approval is not required in any case. However, if such a development were proposed for another site, project proponents would have to apply for a conditional use approval, or have the property rezoned.

An example of this is found in a recent case in Wolseley. On the southeast corner of Westminster and Evanson Street, a business owner bought the duplex house with the intention of converting the ground floor into a business and using the upstairs as living quarters for his family. To do so, he is operating the ground floor as a home office, as his business (a custom perfume blending shop) allows for this. While it is technically not an office (as outlined earlier), City regulations regarding home businesses permitted it. The business owner intends to continue operating as a home business (retail business by appointment only) until the summer of 2000, in order to demonstrate to the neighbourhood that such a business is compatible with the residential character of the street. Once he has gained resident support, he intends to apply for a zoning variance to change the site to a commercial unit, which would allow him to expand the retail area, provide for walk-in customer traffic, and add an entry facing Westminster, to serve retail traffic on that street. This case provides an example of what the residents could do if the site were not already zoned commercial, or if another location was being considered. Should the WSEV site expand at some point in time, this could become an issue.

4.6.5 Incorporation of traffic calming devices onto side streets

Traffic calming devices, such as chokers or speed bumps, are used to slow traffic on the street and make the street a safer place for the community. Of the three streets bordering the eco-village, both Westminster and Arlington are classified as feeder streets (>5000 cars/day). As such, they are unsuitable for traffic calming. However, Evanson Street, with fewer than 2000 vehicles per day, is suitable for traffic calming. (City of Winnipeg Streets and Transportation Department, 1999).

City policies for traffic calming are implemented at the neighbourhood scale. This site is almost too small for traffic consideration, as City staff prefers to examine an entire neighbourhood. The City has a policy of "community traffic management," involving a lengthy community consultation process to deal with traffic issues. There are four different types of traffic calming strategies used by the city. As shown during the consultation process with the community, physical traffic calming devices were identified as an element. This is permitted by the City of Winnipeg, and each street is examined on a case-by-case basis. Thus, if the residents of the eco-village (and the surrounding neighbourhood) wanted to install a "choker," to narrow the street and reduce traffic, they could, provided that the proper process was followed.

The process followed by the City of Winnipeg is to form a traffic committee, which is composed of local residents, City staff and the area councilor, to examine the request, which is then brought to a community hearing. From here, it moves into a zoning/variance meeting, and follows the process to the local community committee (this group is distinct from a community hearing), to the Public Works Committee, and to Council, since a by-law would have to be enacted for the traffic calming to become legal. This process forms somewhat of a barrier to innovate developments. However, Streets and Transportation staff did add that if the eco-village residents purchased the entire section of the street bordering on the site, they could do what they wanted with it, provided that emergency vehicles were still able to access the neighbourhood through a right-of-way. The process of purchasing the street would require the involvement of City Council, and would necessitate a by-law change. Therefore, the project team recommends that any group wishing to develop an eco-village on this site, and hoping to include traffic calming devices should begin the process as early as possible. Other

neighbourhoods have successfully installed traffic calming devices. Residents would have to identify and justify a need for traffic calming on this street, and if they could not, then there is no need to proceed with this process.

4.6.6 Use of vacant corridor between 869 and 871 Westminster

During the course of the consultation process, the owner of Sled Dog Music (869 Westminister) installed benches and landscaping in this space, which is approximately eight feet wide and fifteen feet long. It is not useable as a passageway due a fence that has been installed, separating the vacant corridor from the common space in the back. As the space is private property, the City has no control over the use of it. Benches are a permitted accessory on shared spaces such as this, and it has effectively become a private space. Therefore, the only barrier to continued use of this space is a social one. The owners of the space must be able to continue to agree on the use of it, and it must be maintained. City zoning officers stressed the necessity for ongoing maintenance. While the City will not do anything if the space is allowed to deteriorate, City staff will act if residents complain, and bill the owner for maintenance work done.

4.6.7 Boulevard plantings of indigenous species or other plants

Under the City of Winnipeg Act, there are no provisions as to what may or may not be planted on boulevards (with the possible exception of certain species which are covered by the Narcotics Control Act). Unwritten City policy appears to be to maintain grass along the boulevards, as it is more cost-effective, and allows for easy maintenance. However, there is no regulatory barrier to this particular item. Zoning officers could not find any regulations that

would disallow such planting by residents or businesses, and indeed much of the boulevard is already planted along Westminster. The zoning officers did say that the city would not be responsible for maintaining the boulevard plantings, with the exception of those officially "sanctioned" by the City. For example, during the summer of 1997, Councilor Garth Steek placed several cedar boxes filled with plants along Westminster. These, being City property, are maintained by City work crews. The staff of the Harvest Collective maintains the boulevard plantings in front of their store, although the recent change in ownership of this business puts the future of these planting in doubt.

The zoning officers did point out that the plantings would be subject to control under the Noxious Weeds Act (Province of Manitoba), and if they became overgrown, the city would act to remove them, and the group which undertook the planting would most likely be billed. Staff could not find any examples of the enforcement of this act in the neighbourhood, and there are already many existing boulevard plantings in Wolseley. Therefore, the only barriers to this initiative are financial and social. The financial barrier is the cost of the planting, and the social barrier is in organizing a maintenance program over the course of the growing season (which, in Winnipeg, is just under four months).

4.6.8 Space for people to sit (along the street)

This is at the discretion of individual business owners. So long as the sidewalk is not blocked (two or more persons must be able to walk along the sidewalk), there is no barrier to this. Since benches have already been placed along Westminster, and a seating area exists between Sled Dog and Prairie Sky, there are only two possible locations for more seating; along Evanson Street or Arlington Street. If traffic calming measures are taken on Evanson, or

if the street is entirely closed off, benches would be a suitable addition to the street, to support resident interaction and encourage the formation of social bonds. Again, this is at the discretion of the residents and business owners. No city regulations seem to bar this, and if there are regulations (which the zoning officers were unable to determine), it is doubtful that the city would take action to remove any benches.

4.6.9 Mixed-use zoning

Calthorpe writes that "a certain minimum proportion of uses is required to stimulate pedestrian activity and to provide economic incentives for developing" (Calthorpe, 1993, 63). Basically, mixed-use zoning refers to a relaxation of the zoning laws to allow for a mixture of uses. Often, this is a mixture of residential and commercial units.

Ironically, if the entire WSEV site was razed and redeveloped, the residential units would not be permitted under current zoning rules. All of the residential units exist under what is known colloquially as a "grandfather clause," meaning that they existed in their present form before the site was "officially" zoned, or perhaps rezoned in this case. True mixed-use zoning exists in only a handful of areas in the city, although a study was conducted during the summer of 1998 to examine further possibilities in this area.

Changing the zoning of a site is possible but time-consuming. Formal application must be made to the area planner and the variance process outlined earlier must be followed. Again, zoning will only become an issue if the site expands, or if residents elsewhere in the city want to implement a similar project.

4.7 Case Study: The Eco-Village at the Forks

This final section of the fourth chapter outlines the Eco-Village at the Forks, another case which is noteworthy. This case was not included in the literature review because it is a Winnipeg example, and provides a model against which to base the work done towards regulatory barriers facing the WSEV. The Eco-Village Foundation, headed by Winnipeg lawyer Alan Scarth, commissioned the proposal and, the project architect was Dudley Thompson, of Prairie Partnership Architects.

The proposed community was planned to be one hundred and twenty-five dwelling units, with an expected population of three hundred residents. There were twenty "features" which distinguished the Eco-Village from a standard residential development, and there were three main principles, which provided a base from which to develop these elements.

The principles of the Eco-Village at the Forks were: a thirty-percent reduction in energy use, a fifty-percent reduction in water use and "a new residential model for human community that encourages new life for our city" (Thompson, 1997, p.4). The first two principles would be achieved through the use of technology and through innovative design principles. The third principle would be achieved through design features, such as shared public spaces, a "village centre" and the overall design of the community.

On the surface, this project appears similar to the WSEV. However, there are some substantial differences. The main difference is that this community would be constructed from the ground up, on a bare piece of land, while the WSEV is a retrofit of existing units in an older neighbourhood. Constructing from scratch allows the designer and builders more freedom in terms of the feasibility of the various innovative features, but also costs substantially more.

Regardless of overall differences, several key elements are common to both projects. The first common feature is the use of "green materials", specifically construction materials. While the Forks project proposes an analysis of the construction materials to ensure their "green-ness", based on "Actual as well as latent environmental effectiveness within a practical cost framework" (Thompson, 1997, 5), the WSEV proposes using recycled materials where possible, but does not go into an in-depth analysis.

Another shared feature is the landscaping. Both projects support the use of xeriscaping (landscaping with native plants), and also support community gardening and composting. However, the scale of the Forks site allows for more opportunities to do this, and the WSEV is limited in size.

Both projects also support the inclusion of home-based businesses, although the WSEV would see this on a much smaller scale, due to the size difference between the projects. WSEV businesses will also be restricted to office and/or studio-based businesses, again due to space constraints. The Forks will allow for greater flexibility, as each dwelling contains space on the main floor which can be used, among other things, for a "shop or office" (Thompson, 1997, 7). However, it is worth noting that the WSEV already contains several commercial properties, one of which is home-based.

Another common element is that both projects support the use of a consultative process, which was in fact used by the WSEV team to develop the elements of this project. A difference here is that the stakeholders for the WSEV project includes site residents, while the Eco-Village at the Forks does not contain any residents at the present time. The Eco-Village at the Forks does not, however, outline how this consultative process would take place, merely stating "the development of final designs...is to be initiated through a public

consultation process" (Thompson, 1997, p.6). final similarity is the construction of dwelling units to R-2000 standards. Both projects propose using the R-2000 standard, although the WSEV will retrofit units to this standard, while the Forks proposes building to this standard.

Despite some similarities (the four elements discussed above, the use of R-2000 standards), the two projects do not have a great deal in common. The WSEV is a community-based project, with a strong consultative component, while the Forks project is more of a typical development project, albeit with some conservation and other innovative environmental features. Therefore, it is difficult to compare the two projects.

One footnote included in this proposal is a series of notes written by Dudley Thompson, which details his meeting with the developer and architect for the Healthy House in Toronto. These notes outline some of the barriers faced during the construction of the Healthy House, which the Eco-Village developers were urged to consider. For example, the Toronto team said that nothing is "more powerful than having real people involved in a project...takes the heat away from the evil developer" (Thompson, 1997, Appendix 7, p.3). As outlined earlier, both projects include provisions for a consultative process, although the WSEV includes the current site residents as well. In addition to this, during an interview, Dudley Thompson reiterated the importance of the consultative process as an element of the eco-village.

Another relevant point was that the Toronto team believes that "much of the technology to build an energy-efficient home is standard R-2000 techniques accepted by the construction industry" (Thompson, 1997, Appendix 7, p.3). This reinforces the use of R-2000 standards as a benchmark for both projects to adopt, and also reiterates that the technology to create an energy-efficient (environmentally-friendly) dwelling unit already exists.

Regarding regulatory barriers to the Forks Eco-Village, Thompson stated in an interview that there were no significant barriers. The designers worked closely with the City, and followed the proper channels. With most of the innovative elements being acceptable to the City, regulatory barriers were not a significant factor in this project.

Overall, the significance of the Eco-Village at the Forks rests in the innovative nature of the project itself, and the fact that it is located in Winnipeg. The regulatory framework does not appear to be tested greatly, with the possible exception of greywater separation (Thompson, Appendix 9, p.4). Yet, this project represents one view of what the Winnipeg market could bear, and is noteworthy also for the innovative design features which would reduce overall energy use.

4.8 Conclusion

It is somewhat surprising that the regulatory barriers examined during the course of this study do not impact on the proposed eco-village as much as they had been expected to. In almost all cases, regulatory officials expressed openness and a willingness to accept change, provided that a proper process was followed. This may be somewhat misleading, in that during all of the interviews, officials were informed that this was only a proposal, and was not intended to be built in the near future, so perhaps they felt safe by saying this. If the City, and other regulatory bodies were ever approached with a formal project proposal, there may be less certainty in their response.

Chapter 5: Recommendations and Conclusion

This final chapter outlines several of the key steps necessary to gain approval and support for the Westminster Square Eco-Village Project. In addition, a number of recommendations regarding regulatory and procedural reform are outlined, all of which would encourage and expedite innovative planning ideas and techniques in Winnipeg. The final section discusses the overall feasibility of the project.

5.1 Approval Process

In order to gain approval for this project, the client will have to undertake a number of steps. First of all, support of local political leaders is important. It would help if the Wolseley Resident's Association, the City Councilor, the MLA and the local MP were all supportive of this project. In addition, the support of City Council, in particular, the members of the Property and Development Committee and the Executive Policy Committee would also be helpful, if this project had to go through the appeals process. While political leaders may be unable or unwilling to A-C-T directly on behalf of a specific project, having their support would be a positive step for the project.

Second, neighbourhood support is required. The participants in this process were initially very enthusiastic, but on realizing that this was a long-term project, many lost interest and did not continue to participate. As a strong sense of community is at the heart of an eco-village, without such support, the WSEV will be little more than a condominium development with “green” elements

Third, the client must be prepared for an extended approval process. While the barriers are not as significant as originally anticipated, there still remain some areas which will take a significant amount of time to gain approval. In particular, greywater recycling and traffic calming will require extended periods of time for the approvals. The time factor becomes important when seeking financing for the project, as interest is being paid on the money borrowed - even when the project is stalled during the approval process. Evans et al (1997) remark on this finding repeatedly. In most of their case studies, the applicants had to undergo a protracted approval process.

5.2 Initial Feasibility and Barriers

The project, as outlined by the concept determined through the consultative process is considered to be permissible in Wolseley from a planning and zoning point of view. The greatest barriers are financial and participatory. There is insufficient support within the neighbourhood to allow for the proposed Eco-Village project to take place. However, this may not be the case, in this neighbourhood in the future, or at the present time in another neighbourhood.

In addition, interviews with loans officers demonstrated that most major lending institutions are uncomfortable with financing an innovative, unproven development with characteristics such as this one. Of the six financial institutions approached, only Assiniboine Credit Union would even consider looking at a proposal. A private backer would have to be found for the project, as government grants and incentives are inadequate or unavailable for such a project.

A final non-regulatory barrier is evidenced by the lack of interest shown by the current property owners. The project team decided not to examine the feasibility of including the commercial buildings along Westminster due to the lack of interest and support shown by the owners of these buildings. Only the owner of 153 Evanson (the Sheep Boutique) expressed interest in the project. None of the other commercial property owners showed interest, nor were they willing to discuss the possibility of selling their properties to the Eco-Village. One owner stated that he makes enough money now, and doesn't see the need to sell or to invest in any building upgrades at this time. This is a barrier, as the WSEV requires the support of the property owners, or at the very least, an intent to sell.

5.2.1 Regulatory Barriers - Conclusion

The regulatory barriers faced by potential WSEV residents are not insurmountable. The current location of the proposed Eco-Village is zoned for commercial use, with a "grandfather" clause, which allows for the existing mixed-use development. This would not always be the case however, as few areas within the City of Winnipeg enjoy such a zoning classification. Site selection is a key consideration when choosing a location for an eco-village, and in terms of zoning, this site is ideal.

Other elements of the proposed Eco-Village, such as traffic calming or greywater recycling would be possible as demonstration elements, given adequate funding and support from the relevant City departments. In regard to the WSEV case, the regulatory barriers are insignificant when compared to the social and financial barriers.

5.3 Urban Sprawl and Eco-Villages

A further examination of eco-villages, and indeed of urban sustainability in terms of the larger context of fiscal policy would be recommended for further study. A key component of this is the issue of urban sprawl, which is gaining more attention as the problems it creates become more noticeable. Briefly, urban sprawl can be defined as “low-density growth at the suburban fringe and the concurrent disinvestment and abandonment of older/urbanized communities” (Atkinson et.al, 1995, 195). The full costs of sprawl are borne by society, and especially by the inner city, as infrastructure investment takes place on the fringes. Specific information on the nature of sprawl, and the cumulative effects that sprawl has on urban centres can be found in Orfield’s Metropolitics (Orfield, 1997). Orfield outlines how the Twin Cities of Minneapolis-St.Paul believed that they were “immune from the forces of central city decline, urban sprawl, and regional polarization” but found otherwise (Orfield, 1997, <http://www.brook.edu/press/books/metrop.htm>). Orfield then goes on to illustrate how the Twin Cities dealt with these issues, and outlines the resulting regional government. Beyond Orfield’s work, O’Meara provides further insight into the nature of urban finances and sprawl in Reinventing Cities for People and the Planet (O’Meara, 1999). In particular, the chapter in this document entitled “Financing the Sustainable City” outlines the challenges facing urban governments in financing sustainable options.

Local challenges are outlined in the Manitoba Capital Region Strategy Committee’s discussion document entitled Partners for the Future: Working Together to Strengthen Manitoba’s Capital Region. This document provides specific challenges and relevant statistics for the Capital Region, as does the more recent Capital Region Review Interim Panel Report: July 15, 1999. The Capital Region reports illustrate that urban sprawl is becoming an

important issue, as the so-called 'tax-flight' to municipalities beyond the Perimeter Highway continues.

In other jurisdictions, the effects of sprawl, such as "increased pollution from longer commutes and heavier auto use; higher costs for taxpayers and businesses to build new infrastructure; and continued erosion of open space and sensitive environmental areas" (Greenbelt Alliance, 1999) are well-documented. The Bank of America's "Beyond Sprawl: New Patterns of Growth to Fit the New California" is an excellent source of specific effects and costs for further information.

Given this knowledge, and the experiences of other urban centres, does it not make sense for civic and provincial fiscal policy-makers along with bodies such as the Capital Region Review Panel to examine alternative options such as the WSEV as a way to mitigate the effects of sprawl? The subsidies provided to urban sprawl through infrastructure expenditures act as a disincentive to developers, and as Wilson writes, urban sprawl is "often highly profitable to the developer" (Wilson et.al, 1999, 69). If many of the hard costs of development, such as roads, sewers and schools, were paid for by the developer, or by the users (in terms of direct user-pay), perhaps compact, higher-density developments on serviced land (such as the WSEV) would be more feasible. Although beyond the scope of this practicum research, a more detailed examination of urban sprawl and the related subsidies as a disincentive to sustainable community development would help to identify further barriers to the development of sustainable communities.

5.4 Regulatory Recommendations

Based upon the results of the interviews with key regulatory officials, the major regulatory barriers to the WSEV are those in the area of traffic calming and innovative technology use (whether it be greywater recycling or the use of solar power). Given the existing mixed-use zoning of the site, there are fewer regulatory barriers on this site than would be the case elsewhere in the city. However, steps can be taken by regulatory agencies to make the development process easier for innovative developments elsewhere in Winnipeg. Following is a list of recommendations for reducing regulatory barriers to developments such as this one:

5.4.1 Streamlining of the approval process

As City policy stands, the process to gain approval for projects with multiple innovative features can be time-consuming, depending on the number of zoning variances required, and the amount of work required to circumvent or remove regulatory barriers. Due to the nature of real estate development financing, it is difficult to imagine a financial institution being comfortable with the required length of time. Funds are required to initiate the process (i.e. the drawing up of plans, engineering reports, securing the purchases of the land and buildings), and it is impossible to secure commitments and begin the process without actually owning or signing a lease on the land and buildings. If the approvals process is extended, as, for example, the case is for traffic calming, the project (or that section of it) will be on hold for months. According to Wilson, a lengthy approval process "increases carrying costs and, thus, expense" (Wilson et.al, 1999, p196). "[S]peeding up the approvals process has been one of the most important benefits of green development" (Wilson et.al, 1999, p196).

Once the 'envelope' has been pushed, regulatory officials become aware of the barriers hopefully resulting in a less lengthy approval process, or at least in less time required to educate officials about the nature of the innovations.

5.4.2 Improve communications between City Departments

While this study focused largely on zoning and land-use barriers, there exist other regulatory barriers. Fire, health and building codes are all areas in which regulations can and do affect innovative developments. While zoning and land-use is the largest category of barriers, it is evident from the examples such as greywater recycling and use of alternative energy that other regulatory barriers come into play.

Over the course of this study, it became apparent that communications between different City departments are often less than optimal. This may be more of a personality issue than a policy-based issue, but in one instance, a member of the zoning staff believed that the provision of greywater recycling was allowable according to existing land-use policies, a member of the Waste and Waterworks department disallowed it for health reasons. While it is difficult for members of different departments to be aware of all the current regulations, and indeed there is a need for specialization, inter-departmental communications can, and should be improved, particularly when it comes to implementing innovative developments which are consistent with broad policy objectives of sustainable development. When existing regulations are being challenged, it would be best for members of the respective departments to meet and discuss the application.

There is a process for increased inter-departmental communications in Calgary's CEPAR project. CEPAR recommended that Calgary establish a "mechanism to address

conflict between policies of different departments" (CEPAR Report, 1996). An interdepartmental team would be able to address issues between departments as they arose, rather than having the applicant move back and forth between various departments.

An example of how such communication would be helpful in dealing with innovative developments is found on the WSEV site. One of the buildings currently on the Westminster Square site is the Wolseley Elm Restaurant. When the owners decided to purchase the house and turn it into a restaurant, they were fortunate enough to make contact with a senior planner for the City's Property and Development Department, who lived in the area. Without his support, and his contacts in other departments, the owners doubt that their project would have been successful. For example, the application was approved according to zoning regulations, following the granting of a variance, since restaurants are of a different zoning classification than other commercial uses, and were not permitted on the site without a variance. However, the zoning approval and variance process does not examine the health code, building code or the fire code. Normally, this would have required separate, time-consuming processes to ensure compliance with each of these codes before the restaurant could be opened. Without the facilitation by their contact in the Property and Development Department, the entire process would have been much more difficult and costly than it was.

This example illustrates the need for a type of interdepartmental committee at the approvals level to deal with unusual project proposal which would require the input of several different departments. The proposed WSEV project, or any project with similar features, would certainly require input from a number of departments to gain approval by the City.

The Province of Manitoba has a number of interdepartmental committees. It is at these committees that innovative project ideas are discussed, and suggestions offered, before the

proposal wends its way through the departmental structure. This way, each department is aware of the proposal, and is able to prepare their recommendations. One of the relevant committees, at least in terms of planning, is the Interdepartmental Planning Board.

The various City of Winnipeg departments do meet on interdepartmental levels, but the approvals process is an area that needs to be strengthened in this regard. Key staff from the appropriate departments (Planning, Approvals, Health, Waste and Waterworks, Public Works, Safety, etc.) could form the committee, perhaps with a member of the CAO (Chief Administrative Officer) Secretariat as the Chair. This would ensure that a project requiring additional attention, and challenging existing City regulations would be dealt with in a more timely and attentive fashion.

5.4.3 Examination of existing codes, standards and by-laws

As this study has shown, there are regulatory barriers to innovative, more sustainable forms of development. The specific site considered is distinct in the sense that it exists in an area which is zoned for commercial use, and the existing units are already mixed-use. It can be expected that an infill project proposal on a previously-developed site would experience a much more difficult review and approval process, and would need to conform to City codes and standards which do not promote innovative or sustainable development.

Wolseley is perhaps not the typical site for an innovative development in that it is an older neighbourhood and the land-use regulations are less restrictive than they would be in Whyte Ridge, St. Vital or any of the newer suburbs. It is for other areas of the city with stricter zoning regulations that an overhaul of the codes and bylaws are necessary.

Codes and development standards that encourage pedestrian access, mixed-use building and which support a higher density of dwelling units zoned per acre would result in the creation of neighbourhoods that, at least superficially, resemble the Wolseley area, and could support innovative, more sustainable developments. All of the newer (post-1950) subdivisions in Winnipeg are built according to more restrictive standards and zoning by-laws, with low densities, deep frontages, fewer sidewalks and single-use zoning. In short, the City does not support the provision of innovative developments, and perhaps it is time for the City to examine the reasons why newer suburbs are built to these standards. Several members of the City staff who were interviewed for this document identified this as an issue.

Another point, which was raised by members of the Planning Department is that if Wolseley was razed and completely rebuilt, current zoning by-laws and standards would not allow for it to be rebuilt in the same way. Streets would be wider, densities would be lower and houses would be farther apart and set back further from the street. An examination of by-laws, standards and codes could result in a new "innovative development" system of regulations, which would allow for the development of projects with features similar to those outlined in the WSEV. The codes would not necessarily have to be instituted on a citywide basis, but could be done on a neighbourhood-by-neighbourhood basis in successive stages. This could be especially useful in the development of new subdivisions. Although subdivision development is driven by the development industry, the city could certainly implement new standards for development. Calgary's "Sustainable Suburbs Guideline" would provide a good basis for such work.

Another example of revisiting standards is found in Los Angeles where the City is in the process of changing their development plans, specifically the Alameda District Plan. This

new plan will "create a livable, high-density community," and "calls for up to eleven million square feet of mixed-use pedestrian development" (Wilson et.al, 1999, p218). The City's planning commission approved the plan, and granted all of the necessary approvals. If Los Angeles, a city notorious for urban sprawl, can rework their regulations and standards to allow such developments as this one, surely Winnipeg can do the same. Some work in this direction has already been done in the Osborne Village area, but has not gone beyond the earliest stages. It is time for the City to review their regulations and standards to determine what is still applicable and what should be changed, based on current theories of urban form. The costs of sprawl are well documented, and Winnipeg's regulations make sprawl virtually the only option for new suburbs. If urban sprawl is destined to happen, as seems to be the case at this time, at least let it be more sustainable than it currently is.

5.4.4 Incorporate sustainability into the City's long term planning process

One method of incorporating sustainability doing this would be through the process of a thorough review of the City's regulations and standards in accordance with the principles of sustainable development. As of July of 1999, the City was, in the words of a member of the Chief Administrative Officer (CAO) Secretariat, "embarking on an environmental strategy." This review should be done as a precursor to a complete review and overhaul of the City's codes, standards and bylaws.

The Plan Winnipeg Review Process, which has been underway since the fall of 1998, included workshops on sustainability and the environment. The review resumed in the fall of 1999, although it remains to be seen if the results of these public consultations will Actually

be incorporated into future plans. Perhaps more importantly, it remains to be seen if the City will follow the directives outlined in the plan.

5.5 Conclusion

While the WSEV site does not face as many regulatory barriers as other sites might, particularly locations in the newer neighbourhoods, where population density is lower, and different standards were applied during development, there are still barriers to the WSEV development proposal. The site is perceived to be ideal for the development of a small urban eco-village project, given the existing compact, mixed-use development. The neighbourhood has a reputation of being receptive to environmental concerns, and the City has demonstrated some receptivity to the idea of innovative development in this area, as demonstrated by the willingness of some departments to accept the ideas presented in the WSEV concept. However, significant barriers do exist in the provision of alternative forms of energy and in the area of traffic calming.

Financial and social barriers are also significant for the development of the WSEV. Although they are beyond the scope of this study, they represent an area of necessary future work. For example, the fact that most of the property owners refused to participate is a barrier, one that is essential to overcome. Another barrier is the unwillingness of some residents to participate, and the suggestion that they don't feel that their input is valuable, since their residency is transient in nature. Another concern is the reluctance of all but one major financial institution to examine the feasibility of financing such a project.

Innovative developments require support on all levels, not just the regulatory level. Most of the obstacles in the regulatory environment are related to procedures, and can be

surmounted with time and effort. The time and effort required to move such a project through the review, approval and development process requires capital and support by current and potential residents. In addition to this, the original group involved on the site were not capitalized – they did not own property. Perhaps if they had been capitalized, there might have been more cooperation from others on the site.

The examination of the WSEV has shown that the community support is not as strong as it could be, and a brief study of financing options indicates that the financial barriers are also significant. This project requires an able "champion," someone who is willing to take the lead and make the effort to move the WSEV forward.

Possible "champions" could be members of the planning profession. By the multi-disciplinary nature of the profession, planners are, among other things, capable of working with diverse groups of stakeholders on collaborative efforts. The approval and development of innovative urban projects such as the WSEV requires collaborative efforts between residents, financiers and regulatory bodies. Planners have the skills to work with all of these groups, and could take the lead in efforts such as the WSEV. A member of the City's planning staff worked as one of the original volunteers, but ideally, such a project would have one of the City's community planners formally assigned to work with it.

Finally, it is interesting to note that the original concept for the site developed by Prairie Architects in 1983 contained some additional and provocative features which would have challenged the regulatory environment, such as chicken coops and rooftop greenhouses, a windmill and the narrowing of Westminster Avenue. During the consultation process, residents and business owners declined most of these features. This might suggest that perhaps the social barriers of user receptivity are very significant. After all, a project such as

this will only be as innovative as the residents want it to be. Regulations can be changed, and financial resources can be made available, but consumer receptivity is, in the view of the project team, the most important factor here. This would require more local examples of innovative developments, which would require regulatory reforms and incentives from the City as well. The WSEV could be such an example, and perhaps one day a project such as this will demonstrate some of the many the benefits of sustainable communities to the residents of Winnipeg.

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Personal Interviews

Senior Manager – Winnipeg Hydro: May 1999

Senior Planner – City of Winnipeg, Community Planning Department: Several meetings between September 1998 and June 1999.

Director of Laboratory Service – City of Winnipeg, Waster and Waterworks: August, 1997

Community Traffic Planner – City of Winnipeg, Streets and Transportation Department: June 1999

Senior Traffic Investigator – City of Winnipeg, Streets and Transportation Department, June 1999

Zoning Officers (3) – City of Winnipeg, Property Development Branch: Met repeatedly between January 1998 and June, 1999

President - Wolseley Resident's Association, September 1998

List of Figures

Fig 1.1: Westminster Square Vision – page 89

This drawing is a copy of the original (1983) vision, drawn by Dudley Thompson in 1983.

Fig 1.2: Neighbourhood Map of Wolseley – page 90

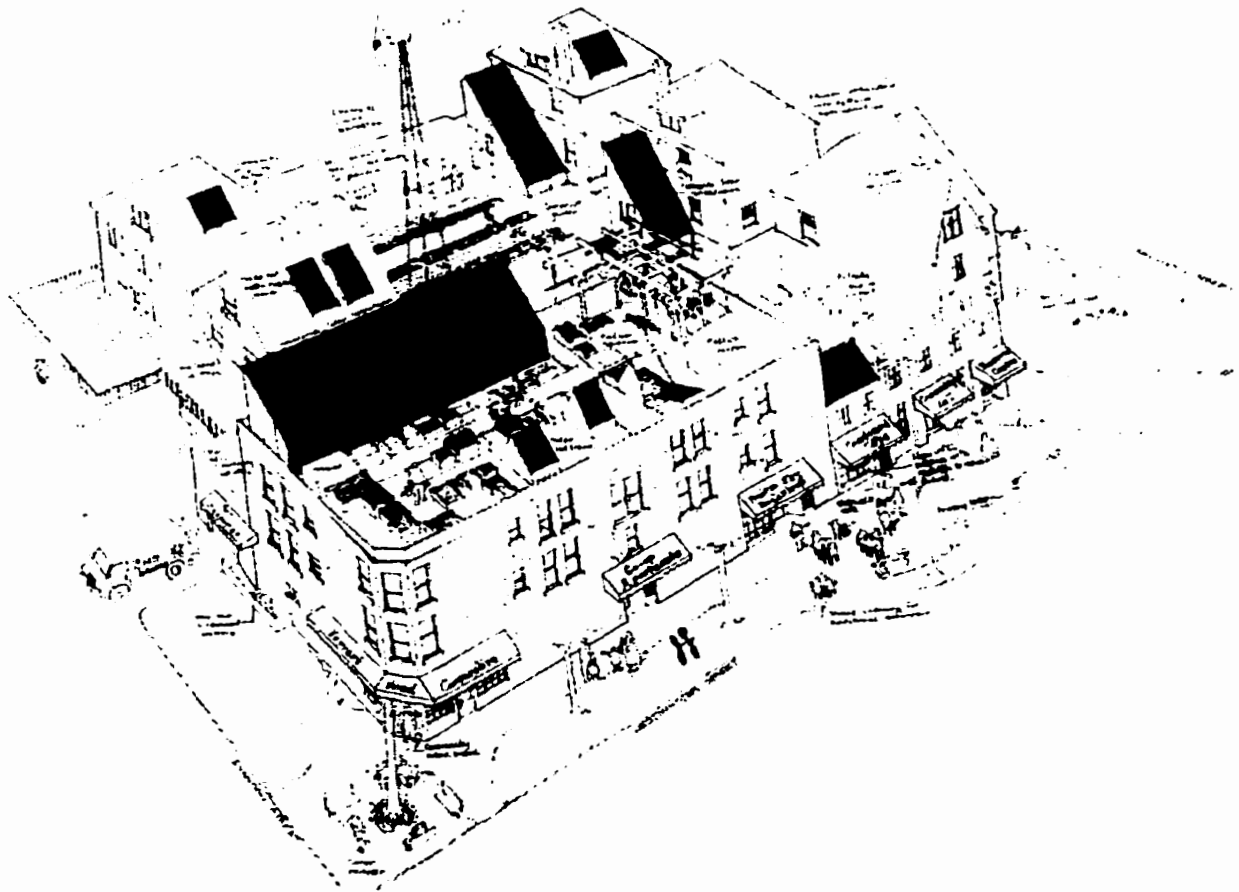
This map shows the neighborhood in which the WSEV is located.

Fig 1.3: Map of Westminster Square – page 91

This map demonstrates where the Wolseley neighbourhood is located in Winnipeg.

Original (1983) Westminster Square Vision

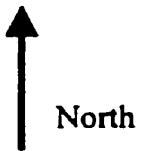
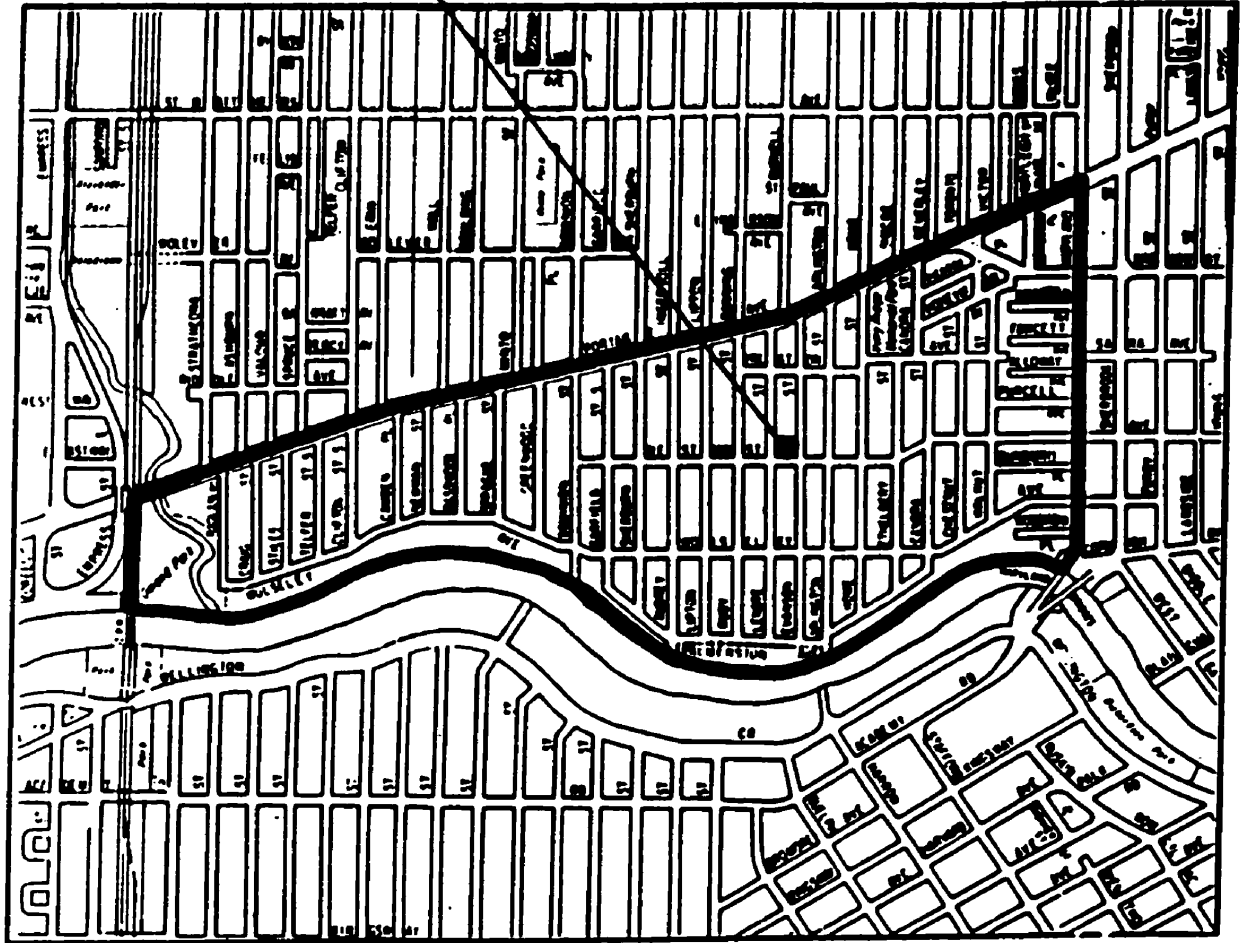
This is the original concept developed in 1983



(Not to scale)

Map of the Wolseley Neighbourhood

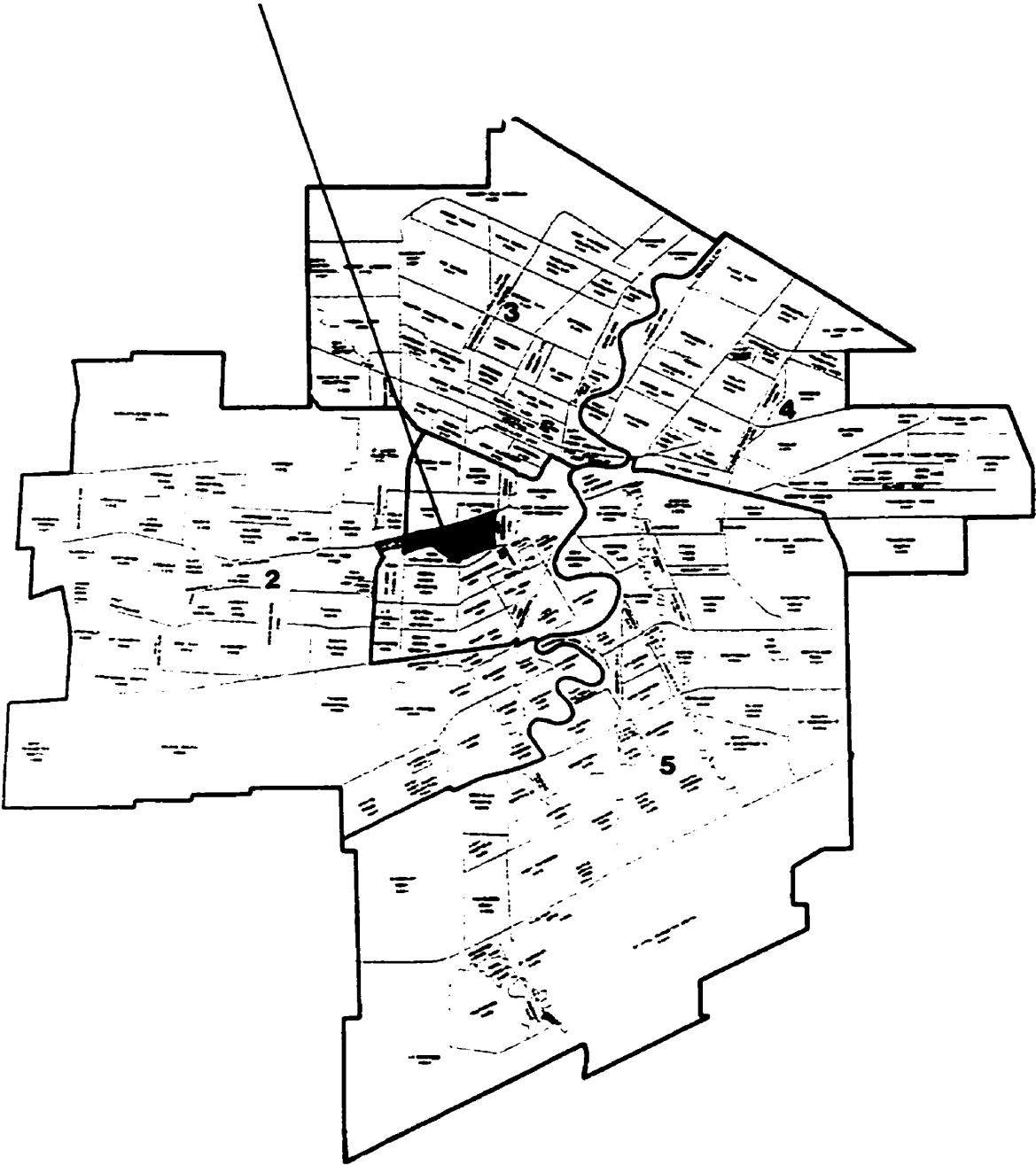
Site of the Westminster Square Eco-Village



(Not to scale)

Map of Winnipeg

Location of the Wolseley Neighbourhood



(Source: The City of Winnipeg)

Not to scale



Appendix A

Resident Information Package

The following information was distributed to the residents of Westminster Square and to potential eco-village residents during the consultative process. A copy of the letter and survey which formed this package is included, as is a pamphlet which was used during the course of the project.

April 16th, 1997

Dear Resident,

Welcome to the Westminster Square Eco-Renovation Project. As a resident of Westminster Square, we are looking for your opinion on this project, which is explained in the enclosed brochure. We have already consulted with the owners of the Sheep Boutique, and Sled Dog Music, and we have discussed our plans with the Wolseley Resident's Association. What we need now is your opinion.

And we should take this time to mention that this is only a proposal. All we're doing is studying this site. We aren't planning on building anything. If the project does go ahead, it will only be with the support of all the residents.

Please take the time to read the information, and complete the survey. We have enclosed a stamped envelope for you to return the survey to us. Just take a few minutes to read everything over, and spend five minutes on the survey.

If you have any questions or concerns about the project, or would just like some more information, feel free to contact Alec Stuart at 772-2037.

Thank you for your time,

The Westminster Square Eco-Renovation Project Team

PS. Did I mention the prize we're giving away? Everybody who returns a survey will be entered in a draw for a \$20 gift certificate to the Wolseley Elm. So hurry up and return those surveys. We're going to be drawing the name on May 1st.

Westminster Square Eco-Renovation Project
Resident Survey

Dear Resident,

Thank you for taking part in this survey. It should take no longer than 5-10 minutes to complete, and your participation is greatly appreciated! Once completed, the surveys will be used to determine the level of support for the proposed eco-renovation project. As stated in the letter, there are no plans for any actual work to be completed at the moment. If any renovations are done, they will only be done after all residents have given their approval, and are actively supporting the project.

For the following questions, please circle "yes" or "no" to answer

1) Are you concerned about the impact that our lifestyles have on the environment?

Yes No

2) Would you be interested in finding a way to make your home more environmentally friendly?

Yes No

3) Do you think that we can change our lifestyles to have less of an impact on the environment (i.e. walking more, driving less, using less energy)?

Yes No

4) Would you like to see Wolseley become more of a "green" or environmentally friendly community?

Yes No

5) Would you be willing to help make this happen?

Yes No

For the following question, please rank the answers from 1 (highest) to 8 (lowest)

6) The following items could become part of a "green" neighbourhood. Please rank them according to how important you think they are

Alternative energy (i.e. solar panels)	_____
Reduced use of automobiles	_____
More reliance on local shops and businesses	_____
Use of a local currency or barter system	_____
Landscaping with native plants	_____
Renovating buildings to save energy	_____
Reducing water use where possible	_____
Greater resident participation in local decision-making	_____
Other	_____

7) Would you be willing to become part of a demonstration project, to show the rest of the city that these initiatives are possible?

Yes No

8) If you have any comments about this project that you would like to add, please do so in this space.

9) If you would like to be involved in the project, please fill out the following information.

Name: _____

Address: _____

Phone Number: _____

Thank you for taking part in this survey. Please use the enclosed envelope to return the survey to us.

As a gesture of our appreciation, all surveys will automatically be entered in a draw to win a \$20 gift certificate to the Wolseley Elm. Please include your name and address to be eligible for the draw. The winners of the Wolseley Elm gift certificate will be notified by mail once all of the surveys are returned.

Vision Statement:

To prepare a redevelopment plan for Westminster Community Square which will:

- create a space which models and demonstrates alternative technologies and to do so in a way which both improves the neighbourhood and preserves Wolseley's character

- create a community meeting space which is a positive, warm environment and to do so in a way which is inclusive, cooperative, invites diversity, builds and deepens social relationships

- demonstrate to the neighbourhood, and to other communities, the value of living harmoniously, both with the natural world, and with each other

The Westminster Square Eco-Village Project is generously supported by the following groups:

Affordability and Choice Today

Klinic

Westminster Housing Society

Special thanks also goes out to the following individuals who have donated their time and energy to work with the

Project:

Paul Chorney

Ross Mitchell

David Moulden

Lee Caldwell

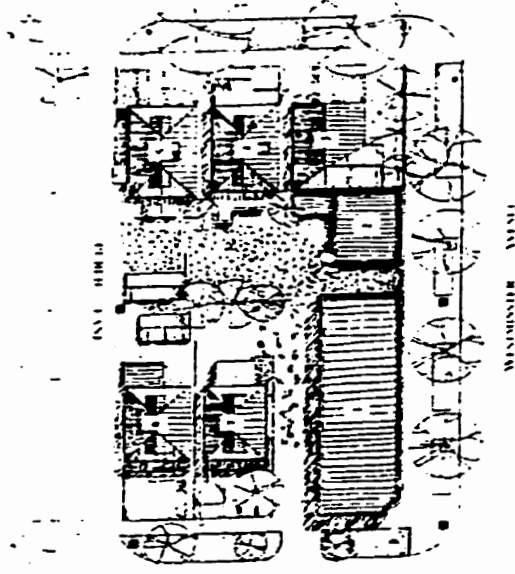
Campbell Wright

Markus Buchart

Rick Penner

(Thanks also go out to the City of Winnipeg Community Planning Office, the Waste and Waterworks Department, the Province of Manitoba and the Wolseley Resident's Association

The Westminster Square Eco-Village Project



Demonstrating a New Design for the Urban Village

What is an "Eco Village"?

An eco-village, or eco-development, is, in simple terms, a community that is fully integrated into the surrounding environment. Eco-villages share the idea that human activities should be harmlessly integrated into the natural world. In addition to the environmental aspect, many eco-villages foster a sense of community as well, building strong bonds among the residents.

97 (Source: the Gaia Trust)

That's nice, but what does it mean for Wolseley?

The residents of Wolseley are lucky enough to have an existing proposal for an eco-village on the site of Westminster Square, right in the heart of Wolseley.

Westminster Square refers to the block along the north side of Westminster Street, bounded by Arlington on the east and Evanson on the west. This area was the site of a study done in 1983,

when Dudley Thompson, of Prairie Partnerships, developed the initial ideas into an architectural drawing.

What are you doing with the site?

The goal of our project is to see what kind of technological and design innovations would be feasible on this site, and what regulations potential eco-village developers would have to work within. We look upon this as an "eco-renovation" project, where residents can see for themselves what it would take to make their homes more environmentally friendly.

And how will this affect us?

If you ever want to create your own eco-village, or even just find out how to make your home more environmentally friendly, our report will give you an outline of the costs, and the civic regulations that you have to work within. For example, say that you want to install solar panels on your garage, to power the lights and plugs. We'll give you the name of a

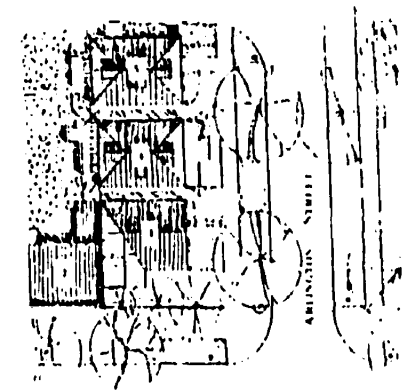
manufacturer, and we'll tell you what kind of regulations you would have to work within.

And if a group of people decide to get together and start their own eco-village, this report will help to guide them on their way.

Sounds great! How can I get involved?

Easy! Come to the workshops, (you'll see posters around the neighbourhood, and even an ad in the Gabber) and tell everybody else you know to come as well

If you want to help out the project directly, please call 779-9065



(This pamphlet is printed on recycled paper)

Appendix B

Letters of Support

The Westminster Square Eco-Village Project received letters of support from both the Wolseley Resident's Association and the City of Winnipeg Community Planning Department. In addition to this, a letter from the Deputy Minister of Housing (Province of Manitoba) is included.



WOLSELEY

RESIDENTS' ASSOCIATION

October 25, 1996

Paul Chorney
Project Coordinator
Westminster Square Eco-Development
153 Evanson St.
Winnipeg R3G2A2

Dear Paul,

Wolseley Residents' Association is pleased to offer its support to the Westminster Square project. The goals of the Association are to work for the improvement of Wolseley as a whole, and we believe that Westminster Square, with its commitment to stabilizing and revitalizing the core of the neighbourhood, certainly shares that goal. In addition, Wolseley residents take a keen interest in the environment, and have pioneered the City recycling program. The environmental initiatives suggested by Westminster Square would certainly be welcomed by the neighbourhood, and could again be a demonstration for the City as a whole.

Cooperatively,

Colin Muir
President



Westminster Housing Society
165 Maryland Street
Winnipeg, MB
R3G 1K9

October 28, 1996

Attention: Mr. Paul Chorney, Project Coordinator

Dear Mr. Chorney:

Re: Westminster Square Demonstration Project

We are pleased to endorse your Westminster Square eco-development project in the Wolseley neighbourhood.

As we understand it, your project team is planning a development which would demonstrate how emerging technologies in waste recycling, water conservation and energy efficiency could be incorporated into a retrofit project involving a block of older homes and mixed-use commercial/residential buildings. We further understand that the project will explore related opportunities and constraints in areas such as co-housing, the legal issues surrounding waste system operation and maintenance agreements, and regulatory issues involving the City of Winnipeg Water and Waste and Land and Development Services departments, Winnipeg Hydro, Manitoba Hydro, and the Departments of Health at the City of Winnipeg and the Province of Manitoba.

The Community Planning Branch of the City of Winnipeg Community Services Department is interested in alternative housing opportunities for Winnipeggers and in the application of new housing technologies in retrofitting older buildings in urban settings. Neighbourhood health and stability is a concern in older neighbourhoods like Wolseley, where pre-war housing accounts for 77% of the housing stock. The deteriorating condition of homes and buildings, due to age, a harsh climate, and the financial and physical burden of operation and upkeep, is destabilizing these inner-city areas and stalling their demographic "recycling." Your project may demonstrate how to breathe new life into old neighbourhoods.

Canada is an urban society. Progress is needed towards adapting Canada's urban areas to the global need for energy conservation, the goals of sustainable development and the demands of an increasingly environmentally conscious marketplace. We are pleased to participate in your project and the opportunity it presents for confronting the issues outlined above.

Sincerely yours,

Bob Nicol,
Manager of Community Planning

/RM



Deputy Minister of Housing

Winnipeg, Manitoba, CANADA
R3C 0V8

January 22, 1997

Mr. Paul Chorney
Westminster Housing Society
165 Maryland St.
Winnipeg, MB R3G 1K9

Dear Mr. Chorney:

Thank you for your letter of December 16, 1996 and for providing a copy of the Westminster Housing Society application for the Affordability and Choice Today (A.C.T.) program.

As your project includes alternative energy generation and building retrofits, I would encourage you to contact the Energy Efficiency and Alternative Energies Branch of Manitoba Energy and Mines for assistance. The contact person is Mr. Grant McVicar (945-3674).

I commend your organization's efforts and wish you success.

Yours truly,

A handwritten signature in black ink, appearing to read "W. J. Kinnear".

W. J. (Bill) Kinnear, C.A.

